EA Engineering, Science, and Technology, Inc., PBC

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29 April 2016

Ms. Katrina Higgins-Coltrain
Task Order Monitor
U.S. Environmental Protection Agency (EPA) Region 6
1445 Ross Avenue
Dallas, TX 75202-2733

RE: Health and Safety Plan, Revision 01
Wilcox Oil Company Superfund Site
Remedial Investigation/Feasibility Study
Remedial Action Contract 2
Contract: EP-W-06-004
Task Order 0128-RICO-06GG

Dear Ms. Higgins-Coltrain:

EA Engineering, Science, and Technology, Inc., PBC (EA) is enclosing one electronic copy via email of the Health and Safety Plan, Revision 01, for the above-referenced Task Order. Revision 01 is responsive to EPA comments received on 8 December 2016, and incorporates the findings of the December 2015 field investigation.

An electronic copy is also being emailed to Oklahoma Department of Environmental Quality (ODEQ).

Please do not hesitate to contact me at (505) 224-9013 if you have any questions.

Sincerely,

Teri McMillan
Project Manager

cc: Michael Pheeny, EPA Contract Officer (letter only)
Rena McClurg, EPA Project Officer (letter only)
Todd Downham, ODEQ Project Manager (e-mail copy)
Tim Startz, EA Program Manager (letter only)
File

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TRANSMITTAL OF DOCUMENTS FOR ACCEPTANCE BY EPA		DATE: **29 April 2016**	TRANSMITTAL NO.: **0003**
TO: **Ms. Katrina Higgins-Coltrain** **U.S. Environmental Protection Agency Region 6**		FROM: **Teri McMillan** **EA Engineering, Science, and Technology, Inc., PBC**	
SUBTASK NO.	DELIVERABLE	NO. OF COPIES	
1.2.2	Site Health and Safety Plan, Revision 01 Wilcox Oil Company Superfund Site Remedial Investigation/Feasibility Study Bristow, Creek County, Oklahoma	Electronic Copy via e-mail to EPA and ODEQ	
ACCEPTANCE ACTION			
DOCUMENTS FOUND ACCEPTABLE (LIST BY SUBTASK NO.)		NAME/TITLE/SIGNATURE OF REVIEWER DATE	

Health and Safety Plan for Remedial Investigation/Feasibility Study

Wilcox Oil Company Superfund Site
Bristow, Creek County, Oklahoma
EPA Identification No. OK0001010917

Remedial Action Contract 2 Full Service
Contract No.: EP-W-06-004
Task Order: 0128-RICO-06GG

Prepared for:

U.S. Environmental Protection Agency
Region 6
1445 Ross Avenue
Dallas, Texas 75202-2733

Prepared by:

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April 2016
Revision: 01
EA Project No. 14342.128

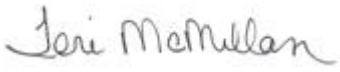
Health and Safety Plan for
Remedial Investigation/Feasibility Study

Wilcox Oil Company Superfund Site
Bristow, Creek County, Oklahoma
EPA Identification No. OK0001010917

Remedial Action Contract 2 Full Service
Contract No.: EP-W-06-004
Task Order: 0128-RICO-06GG

29 April 2016

Tim Startz., Program Manager — Date
EA Engineering, Science, and Technology, Inc., PBC



29 April 2016

Teri McMillan, Project Manager — Date
EA Engineering, Science, and Technology, Inc., PBC

29 April 2016

Peter Garger, Corporate Health and Safety Director — Date
EA Engineering, Science, and Technology, Inc., PBC

Revision: 01
EA Project No. 14342.128

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LIST OF ACRONYMS AND ABBREVIATIONS

ACGIH	American Conference of Governmental Industrial Hygienists
ACM	Suspected asbestos-containing material
CFR	Code of Federal Regulations
COPC	Chemical of potential concern
CPR	Cardiopulmonary resuscitation
CRZ	Contamination Reduction Zone
dBA	Decibel(s) on the A-weighted scale
DPT	Direct-push technology
EA	EA Engineering, Science, and Technology, Inc., PBC
EPA	U.S. Environmental Protection Agency
HSA	Hollow-stem auger
HSP	Health and Safety Plan
kV	Kilovolt(s)
Magellan	Magellan Midstream Partners, LP
mg/m^3	Milligram(s) per cubic meter
ml	Milliliter(s)
NORM	Naturally-occurring radioactive materials
ODEQ	Oklahoma Department of Environmental Quality
OSHA	Occupational Safety and Health Administration
PEL	Permissible Exposure Limit
ppm	Part(s) per million
PPE	Personal protective equipment
RI/FS	Remedial Investigation/Feasibility Study
RPM	Remedial Project Manager
SERAS	Scientific, Engineering, Response, and Analytical Services
Site	Wilcox Oil Company
SHSO	Site Health and Safety Officer
SZ	Support Zone
TENORM	Technologically-enhanced naturally-occurring radioactive materials
TLV	Threshold Limit Value
TWA	Time-weighted Average
µg	Microgram(s)
XRF	X-ray fluorescence

1. INTRODUCTION

EA Engineering, Science, and Technology, Inc., PBC (EA) has been authorized by the U.S Environmental Protection Agency (EPA), under Remedial Action Contract No. EP-W-06-004, Task Order 0128-RICO-06GG, to conduct a Remedial Investigation/Feasibility Study (RI/FS) at Wilcox Oil Company Superfund Site (site), Bristow, Creek County, Oklahoma (EA 2015b).

1.1 PURPOSE

The purpose of this Health and Safety Plan (HSP) is to provide personnel with protection standards and mandatory safety practices, procedures, and contingencies to be followed while performing field activities at the site. This HSP as developed defines actions to be taken with respect to personal safety during work activities associated with the RI/FS field efforts (EA 2016).

EA considers the safety and health of its employees, clients, and visitors, and the prevention of work-related accidents and illness and property loss to be of the highest priority. Proactively implemented, a comprehensive and systematic health and safety program will result in more efficient and profitable operations by improving employee health and morale, and by reducing worker's compensation costs, lost time, fire and liability insurance premiums, and property damage. The objectives of EA's Safety and Health Program are to ensure:

1. Sound safety and health practices and conditions necessary for the protection of the health and welfare of employees, clients, and visitors
2. Compliance with federal and state safety and health regulations and standards
3. Effective safety and fire prevention practices necessary for protection of company-owned or operated property.

This HSP addresses the following regulations and guidance documents:

- Occupational Safety and Health Administration (OSHA) Standards for General Industry, 29 Code of Federal Regulations (CFR) 1910
- OSHA Standards for Construction Industry, 29 CFR 1926
- National Institute of Occupational Safety and Health, OSHA, EPA, and U.S. Coast Guard *Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities*, October 1985.

One copy of this HSP will be maintained for use during the entire duration of field activities and made available for onsite use/employee review at all times.

The HSP Review Record in Appendix A must be signed by all personnel before they enter the site. Protocols established in this HSP are based on available site conditions/data and health and safety hazards known or anticipated to be present. This plan is intended solely for use during proposed activities described in the corresponding site-specific Work Plan. Specifications herein are subject to review and revision based on actual conditions encountered in the field during site

activities. Significant revisions to this plan must be approved by the Project Manager and the EA Health and Safety Coordinator.

1.2 BACKGROUND

A description of site history and the field activities covered by this HSP are included below.

1.2.1 Site History

Wilcox Oil Company is an inactive and abandoned oil refinery located in Creek County, Oklahoma (Figure 1). The geographical coordinates for the site are 35°50'26.8966" north latitude and 96°22'48.693" west longitude. The site spans approximately 125 acres. The site consists of contaminated areas and surface water bodies due to releases from the former Lorraine and Wilcox Refineries. These refineries were located in the N ½ of the NW 1/4 of S29 T16N R9E and the SW ¼ of the SW ¼ of S20 T16N R9E in Creek County, Oklahoma (Figure 2). Two refinery process facilities and storage tank areas once operated at the two facilities. Historical investigations indicate the presence of contamination from former activities. A detailed title search in the Creek County Clerk office confirms that the property was used in oil refinery operations from 1915 until November 1963. A skimming and cracking plant was constructed in 1929. The main components of the plant consisted of a skimming plant, cracking unit, and re-distillation battery with a vapor recovery system and treatment equipment. The Wilcox Oil Company expanded when it acquired the Lorraine Refinery in 1937, which was located west of the railroad. Oil refining began in 1915 at the Lorraine Refinery. Wilcox sold the property to a private individual in 1963. Most of the equipment and storage tanks were auctioned or salvaged for scrap metal by the new property owners. Wilcox Oil Company no longer operates in Oklahoma. Based on information from the Oklahoma Secretary of States' office, the company merged with Tenneco Oil Company in 1967.

The location of the releases from the two refineries is considered to be a single site composed of a commingled release from the combined refinery operations threatening the same targets.

The site includes remnants of former oil refining operations and tank farms. The facility can be divided into five (5) major former operational areas (Figures 2 and 3): the Wilcox and Lorraine Process Areas, the East and North Tank Farms, and the Loading Dock Area. An active railroad divides the two former process areas and product storage areas.

- Wilcox Process Area – The Wilcox Process Area is fenced and spans approximately 18 acres. Most of the equipment and storage tanks that remained onsite in 1963 were auctioned and salvaged for scrap iron by private land owners; any remaining structures are in ruins. Four aboveground storage tanks (12,500-gallon capacity each) remain standing, in addition to a number of discarded drums and pieces of scrap iron. A former lead additives area is present that is barren. There are multiple areas of stressed vegetation, barren areas, and visible black tarry waste of a hydrocarbon nature. A building in the northern part of the former refinery has been converted to a residence, which is currently vacant. An intermittent creek (West Tributary) flows southward across the eastern portion of the former refinery process area through a small pond in the southeast corner of the refinery area into Sand Creek.

- Lorraine Process Area – The Lorraine Process Area covers the southwestern portion of the site, south of West 221st Street South (Refinery Road) and west of the railroad tracks. No refinery structures remain in either the processing area or refined product storage area. The First Assembly of God Church, which is currently vacant, a playground, and a vacant residence are located in this area. A creek borders the western boundary of the Lorraine Process Area and flows south to Sand Creek. There are multiple areas of stressed vegetation, barren soil, and visible black tarry waste of a hydrocarbon nature.
- North Tank Farm – The North Tank Farm is located north of West 221st Street South (Refinery Road) and west of the railroad tracks. The boundaries are not well defined to the north. The North Tank Farm was associated with the Lorraine Refinery. There are areas of stressed vegetation, and visible black tarry waste of a hydrocarbon nature.
- Loading Dock Area – The triangular-shaped Loading Dock Area is located north of West 221st Street South (Refinery Road) and east of the railroad tracks. There is visible staining in this area.
- East Tank Farm – The former large crude oil storage area/tank farm spans approximately 80 acres and includes pits, ponds, and a number of circular berms that surround tank bottoms. All of the crude oil storage tanks have been removed; however, remnants of the tank storage contents remain and are visible. Many of the berms surrounding the pits, ponds, and former tanks have been breached or leveled. There are four residences located on or directly next to former tank locations. Three of the residences are known to use water from domestic/private wells located onsite. There are multiple areas of stressed vegetation, barren soil, and visible black tarry waste of a hydrocarbon nature. Waste was also observed in several drainage channels that empty into Sand Creek. A creek is located along the eastern boundary of the East Tank Farm and flows south through a series of ponds to Sand Creek. Magellan Midstream Partners, LP (Magellan) operates a pumping station in the north-central portion of the East Tank Farm Area, as well as an active pipeline that transects the East Tank Farm, Loading Dock, and North Tank Farm Areas from the southeast to the northwest. Magellan has been known to pump several different petroleum products through the active pipeline, including kerosene, gasoline, jet fuel, and diesel.

Current access to the property is not controlled, although portions of the site are fenced. The drainage pattern of the property is primarily towards Sand Creek, which borders the western and southwestern boundaries of the property. Two intermittent streams and several drainage channels transect the property east of the railroad (Wilcox Process Area and East Tank Farm), all of which flow into Sand Creek.

Waste management practices are not known at this site. Sanborn maps (Environmental Data Resources Inc. 2012) were available for some areas of the site and were reviewed to identify the possible locations where contamination may have originated. Waste associated with crude oil refining include the following: petroleum-related compounds, tank residues, crude oil, fuel oil, gas oil, distillate, kerosene, benzene, petroleum ether, brine, acid and caustic sludge, heavy metals, coke, sulfur compounds, solvents, and naturally-occurring radioactive materials (NORM)/technologically enhanced naturally-occurring materials (TENORM). Hexavalent chromium may be present where activities associated with the cooling pond and cooling tower

took place. Lead was detected in soil via X-ray fluorescence (XRF) at very high concentrations in the former Lead Mixing Area (Wilcox Process Area). The following chemicals of potential concern (COPCs) may be present at the site based on historical process information and previous site investigations:

- Polycyclic aromatic hydrocarbons, including coal tar pitch volatile compounds (such as anthracene, benzo(a)pyrene, chrysene, phenanthrene, and pyrene) and other petroleum-related semivolatile organic compounds, in soil, sediment, and waste materials
- Petroleum hydrocarbons—including gasoline-range organic and oil-range organic fractions—in soil, ground water, and waste materials; volatile petroleum hydrocarbons may include benzene, toluene, ethyl benzene, and xylene; and ethylene dibromide.
- Metals—such as arsenic, barium, hexavalent chromium, copper, lead, mercury, and nickel—in soil, sediment, and waste materials
- Hexavalent chromium in soil, sediment, and waste materials
- Cyanide.

The list of COPCs will be refined as the investigation progresses.

1.2.2 Scope of Work

The field activities covered by this HSP include:

1. Site reconnaissance
2. Site preparation, including clearing and chipping activities
3. Private water supply well search
4. Wetland survey/delineation
5. Waste area delineation using Global Positioning System equipment
6. Survey of seep locations and collection of elevation measurements
7. Suspected asbestos-containing material (ACM) survey
8. NORM/TENORM survey of aboveground auxiliary equipment/structures
9. Subsurface soil boring activities
10. Surface and subsurface soil sampling
11. Sediment and surface water sampling
12. Private water supply well sampling
13. Vapor intrusion sampling
14. Intrusive field activities in the Lead Additive Area
15. Monitoring well installation and development
16. Monitoring well sampling

17. Ground water elevation measurements of monitoring/piezometer wells
18. Surveying of monitoring/piezometer wells
19. Aquifer testing
20. Biota sampling (e.g., fish, invertebrates, and plants) (if warranted)
21. Management of investigation-derived waste (IDW).

1.3 SAFETY, HEALTH, AND EMERGENCY RESPONSE PLAN ORGANIZATION

This HSP presents the approach to safety during execution of the task order activities conducted at the site. This section presents an introduction and outlines the report organization. Section 2 summarizes the project management team. Section 3 outlines the hazard communications and environmental monitoring during field operations. Section 4 presents the required employee training. Section 5 details personal protective equipment (PPE). Section 6 summarizes emergency response reactions to site contingencies. Section 7 outlines site controls and work zones.

Prior to arriving at the site, this HSP must be reviewed and an agreement to comply with the requirements must be signed by all personnel, including contractors, subcontractors, and visitors (Appendix A). Contractors and subcontractors are ultimately responsible for ensuring that their own personnel are adequately protected. In signing this agreement, the contractors and subcontractors acknowledge their responsibility for the implementation of the HSP requirements. All personnel onsite shall be informed of the site emergency response procedures and any potential health and safety hazards associated with site operations.

All personnel entering the site must participate in the daily safety meetings and sign the Daily Safety Meeting Form (Appendix C). In addition, a list of personnel onsite will be recorded in Daily Site Log (Appendix B) and maintained onsite.

2. PROJECT MANAGEMENT

This section identifies key personnel that will be involved in RI/FS activities at the site.

2.1 KEY PERSONNEL

Table 1 presents information on key project personnel.

TABLE 1 PROJECT PERSONNEL

Name	Position	Work Phone	Cell Phone
Katrina Higgins-Coltrain	EPA Task Order Monitor EPA Remedial Project Manager (RPM)	(214) 665-8143	---
Todd Downham	Oklahoma Department of Environmental Quality (ODEQ) RPM	(405) 702-5136	---
Thomas Kady	EPA Environmental Response Team Work Assignment Manager	(732) 906-6172	---
Tim Startz	EA Program Manager	(972) 315-3922	(214) 616-7027
Pete Garger	EA Corporate Health and Safety Director	(410) 527-2425	(410) 790-6338

Name	Position	Work Phone	Cell Phone
Teri McMillan	EA Project Manager	(505) 224-9013	(505) 259-6779
Luis Vega	EA Alternate Project Manager	(972) 459-5040	(214) 280-9031
Brian Yost	EA Office Health and Safety Coordinator	(972) 315-3922	(214) 906-0253
To be determined	EA Site Manager	---	---
	EA Site Health and Safety Officer (SHSO)	---	---

2.2 RESPONSIBILITIES

Clear lines of authority will be established for enforcing compliance with the safety, health, and contingency procedures consistent with industry policies and procedures.

Designated EA personnel are responsible for implementation of the HSP during field activities. This includes field supervision; enforcing safe work practices and decontamination procedures (if needed); ensuring proper use of PPE; communicating site safety program modifications and requirements to site personnel; proper reporting of injuries, illnesses, and incidents to the appropriate internal and external organizations; and containing and controlling the loss of potentially hazardous materials to soil, air, and surface/ground water during all phases of investigation operations. In addition, EA personnel are responsible for implementing and directing emergency operations and coordinating with onsite and offsite emergency responders (if any).

In the event of an onsite injury, occupational illness, near miss, or environmental contamination incident, the following organizations/individuals will be notified as appropriate:

- Program Manager
- Office Health and Safety Coordinator
- Site Manager/Site Health and Safety Officer
- Corporate Health and Safety Director
- Project Manager.

2.2.1 Project Manager

The ***Project Manager*** has overall responsibility for site activities and will be the primary contact during field activities.

2.2.2 Health and Safety Coordinator

The ***Health and Safety Coordinator*** is responsible for administering the company health and safety program. The Health and Safety Coordinator will act in an advisory capacity to the Project Manager and personnel onsite for task order-specific health and safety issues. The Project Manager will establish a liaison between officers and representatives of the EPA and the Health and Safety Coordinator on matters relating to health and safety.

2.2.3 Site Health and Safety Officer

The ***Site Health and Safety Officer*** is responsible for coordination of onsite contingency operations, as well as the implementation of Site Health and Safety Program. The SHSO will be onsite throughout the task order and will be responsible for daily compliance with site safety and health requirements.

For this task order, the SHSO and the Site Manager will be one person. In the event of an emergency situation, the Site Manager/Site Health and Safety Officer will be responsible for initiating and coordinating emergency responses/contingency operations.

The Health and Safety Coordinator and Site Manager/Site Health and Safety Officer will have the authority to make on-the-spot corrections concerning safety, health, and environmental pollution infractions.

2.2.4 Site Manager

The ***Site Manager*** reports to the Project Manager and Health and Safety Coordinator. His/her responsibilities include, but are not limited to, providing technical support, evaluating onsite environmental monitoring results, coordinating site activities with subcontractors, initiating evacuation of the work site when needed, communicating with offsite emergency responders, and coordinating activities of onsite and offsite emergency responders.

2.2.5 Corporate Health and Safety Director

The ***Corporate Health and Safety Director*** reports to the senior management and is responsible for establishing and administering the company-wide health and safety program designed to ensure compliance with federal and state health and safety regulations and standards, and safe work practices.

2.2.6 Program Manager

The ***Program Manager*** reports directly to the senior management. He/she oversees management and coordination between client, staff, and subcontractors.

2.2.7 Employee Responsibilities

Employees are responsible for reading, understanding, and meeting the health and safety requirements contained in this HSP. A HSP Review Record sign-off sheet is provided in Appendix A. Employees are required to implement these procedures when conducting daily operations. This will also include receiving appropriate training and medical monitoring (if required) and utilization of EA provided health and safety equipment (to include all forms of PPE) to safely conduct site operations. Employees will review each task prior to commencement to consider the potential health and safety hazards, and the measures to be taken in the event of an emergency. Employees should know where safety data sheets, first aid supplies, and emergency equipment are maintained. The Site Manager/Site Health and Safety Officer should

be notified of potential health and safety hazards, near-miss conditions, or incidents present on the job site or unusual effects believed to be related to hazardous chemical exposures. Failure to follow established health and safety procedures could result in immediate dismissal from the site and, if repeated, a potential loss of employment.

2.2.8 Subcontractors

Responsibilities of subcontractor personnel include following the HSP and applicable health and safety rules, regulations, and procedures; using required controls, procedures, and safety devices, including PPE; notifying his/her supervisor of identified or suspected emergencies, safety, or health hazards; and complying with training and medical requirements (if required). Subcontractor personnel are responsible for reading, understanding, and meeting the health and safety requirements contained in this HSP in addition to their own HSP. The Site Health and Safety Plan Review Record in Appendix A must be signed by all subcontractors.

The subcontractors may elect to prepare a HSP Addendum, or they may adopt this HSP.

3. HAZARD EVALUATION AND CONTROL

Field activities to be performed by EA and subcontractors during the RI include the following tasks:

1. Site reconnaissance
2. Site preparation, including clearing and chipping activities
3. Private water supply well search
4. Wetland survey/delineation
5. Waste area delineation using GPS equipment
6. Survey of seep locations and collection of elevation measurements
7. ACM survey
8. NORM/TENORM survey of aboveground auxiliary equipment/structures.
9. Subsurface soil boring activities
10. Surface and subsurface soil sampling
11. Sediment and surface water sampling
12. Private water supply well sampling
13. Vapor intrusion sampling
14. Intrusive field activities in the Lead Additive Area
15. Monitoring well installation and development
16. Monitoring well sampling
17. Ground water elevation measurements of monitoring/piezometer wells
18. Surveying of monitoring/piezometer wells
19. Aquifer testing
20. Biota sampling (e.g., fish, invertebrates, and plants) (if warranted)
21. Management of IDW.

EA will oversee non-team subcontractor performance of Tasks 2, 7, 8, 9, and 14. EA and team subcontractor staff will be responsible for completing the remaining tasks.

3.1 PHYSICAL AND BIOLOGICAL HAZARDS

Table 2 summarizes the potential physical hazards and appropriate control measures for each of the above-listed tasks.

TABLE 2. PHYSICAL AND BIOLOGICAL HAZARD EVALUATION AND CONTROL

Hazard	Tasks	Control Measures
Biological	1 through 21	• Potential Hazard: Poison ivy, poison oak, snakes, insect bites, stings, dogs • Establish site-specific procedures for working around identified hazards • Insects – areas of heavy vegetation • Clear vegetation, when necessary, within the work zone and wear long-sleeve shirts, pants, and gloves • Snakes – wear snake guards or chaps • Dogs – Make arrangements with property owner in advance.
Cold Stress	1 through 21	• Provide warm break area and adequate breaks • Provide non-caffeinated beverages • Promote cold stress awareness.
Drilling	9 and 15	• Keep safe distance from the drill rig • Locate 'kill-switch' of the drill rig to stop the drill rig, in case of emergency • Cease activities during thunderstorm periods • Maintain line of sight to driller during drilling activities • Wear proper PPE – hard hat, safety glasses, steel-toed boots. • Any intrusive activities in the Lead Additive Area will require the use of respiratory protection and air sampling/monitoring.
Dust	1 through 21	• Lead Additive Area – monitor dust, wear appropriate PPE and respirator, as appropriate.
Fire and Explosion	2, 9, and 15	• Inform personnel of the locations of potential fire/explosion hazards • Identify subsurface utility lines, if possible • Establish site-specific procedures for working around flammables • Ensure that appropriate fire suppression equipment and systems are available and in good condition.
Heat Stress	1 through 21	• Promote heat stress awareness • Provide cool break areas and adequate breaks • Provide non-caffeinated beverages.
Heavy Equipment Operations	2, 9, and 15	• Ensure that the operators are properly trained and equipment has been properly inspected and maintained • Establish equipment routes, traffic patterns, and site-specific safety measures • Assign spotters and inform of proper hand signals and protocols • Wear reflective vests while working around heavy equipment • Keep safe distance from all the equipment • Lifting capacities and load limits of equipment will not be exceeded. • Wear proper PPE – hard hat, safety glasses, steel-toed boots.
Impaling	1 through 21	• Sharp protruding objects (steel rebar, debris, etc.) – walk carefully • Wear proper PPE – hard hat, safety glass, steel-toed boots • Conduct work during daylight hours only.
Noise	2, 9, and 15	• Keep safe distance from all the equipment • Implement hearing protection measures • Establish noise level standards for all onsite equipment.

Hazard	Tasks	Control Measures
Power Tools	2, 7, 9, 13, 15, and 19	• Comply with the requirements of 29 CFR 1926 Subpart P • Only allow trained personnel to use power tools • Wear proper PPE.
Site Debris	1 through 21	• Trip/Fall hazard – walk carefully • Wear proper PPE – hard hat, safety glass, steel-toed boots • Wear hard hat, safety glasses to protect against flying debris • Work only during daylight hours • Follow illumination requirements of 29 CFR 1926 Subpart P if sufficient illumination is absent • Contact local utility company, if required.
Vapors	1 through 21	• Hydrocarbon vapors – monitor breathing zone during intrusive activities; don respirators, as appropriate.
Vehicle and Pedestrian Traffic	1 through 21	• Barriers to separate work areas from vehicle and pedestrian traffic • Barriers demarcating work area even if site is inactive during work operations • Wear proper PPE – reflective vests or other high visibility material.
Utility Lines	1, 2, 9, 13, and 15	• Identify and locate existing utilities prior to work, including natural gas, power, telephone, cable, and water • Coordinate with Magellan for work near petroleum pipeline • Contact local utility company, if required • Keep safe distances from utility lines.
Water/Drowning Hazard	1, 4, 6, 11, and 20	• Have Emergency Flotation Device at worksite • Provide a ladder, rope, or other similar device for emergency egress from surface water features being sampled • Field work shall be conducted in pairs (two people at all times) • Wear proper PPE – chest waders and personal flotation devices, as appropriate.

NOTES:
Field Activities:

1. Site reconnaissance.
2. Site preparation, including clearing and chipping activities
3. Private water supply well search
4. Wetland survey/delineation
5. Waste area delineation using GPS equipment
6. Survey of seep locations and collection of elevation measurements
7. Suspected ACM survey
8. NORM/TENORM survey of aboveground auxiliary equipment/structures.
9. Subsurface soil boring activities
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18. Surveying of monitoring/piezometer wells
19. Aquifer testing
20. Biota sampling (e.g., fish, invertebrates, and plants) (if warranted)
21. Management of IDW.

The following section provides a brief description of physical hazards that may potentially be present during field activities. These physical hazards may include, but are not limited to:

- Fire/explosion
- Heat/cold stress
- Heavy equipment
- Noise
- Electrical
- Utilities
- Weather
- Biological
- Vehicular and pedestrian traffic
- Site debris
- Water/drowning Hazards.

The site will be visually inspected for the presence of general safety hazards (e.g., trip/slip hazards, unstable surfaces or steep grades, vehicle and pedestrian traffic, sharp objects) prior to beginning work. If hazards are identified, these hazards will be recorded and precautionary measures taken to prevent injury.

3.1.1 Fire/Explosion

The potential for fire and/or explosive conditions will exist. Workers must continuously monitor the work area for combustible or explosive gases when operations have the potential to generate sparks. Employees should always be alert for unexpected events, such as ignition of chemicals or sudden release of materials under pressure, and be prepared to act in these emergencies.

Smoking is not allowed at any time within the work area.

Field vehicles will be equipped with a fire extinguisher. Employees must be trained in the proper use of fire suppression equipment. However, professionals should handle large fires that cannot be controlled with a fire extinguisher. The proper authorities (local fire department) should be notified in these instances.

Magellan operates an active pipeline that transects the East Tank Farm, Loading Dock, and North Tank Farm areas from the southeast to the northwest. Magellan has been known to pump several different petroleum products through the active pipeline, including kerosene, gasoline, jet fuel, and diesel. The pipeline is buried between 2 and 4 feet below ground surface. Prior to moving heavy equipment over the pipeline or before working with heavy equipment near the pipeline (drill rig, excavator, etc.), Mr. Cliff Winn with Magellan will be contacted at 918-574-7588 (office), 918-720-3027 (cell), or 800-720-2417 (emergency toll free) to coordinate work and establish setbacks.

Residents in the area have natural gas lines servicing their homes. These lines will be identified and utility company setbacks established prior to any excavation or drilling activities.

3.1.2 Heat Stress and Heat-Related Illness

Effects of heat stress and illness are possible during the performance of field activities at the site. Injury from heat exposure may occur to persons working outdoors during a period of high temperature conditions. This is a major concern when personnel are working in PPE clothing. The body's principal means of cooling is through the evaporation of sweat. When personnel are working in PPE, sweat is trapped inside the clothing and cannot evaporate, thus raising the body's core temperature and resulting in a heat-related illness. Monitoring will commence at temperatures of 70 °F and above when employees are wearing impervious full-body clothing. Personnel should be familiar with the signs and symptoms of heat stress. These include:

- **Heat Cramps**—Painful contraction of voluntary muscles
- **Heat Exhaustion**—Dizziness, lightheadedness, slurred speech, rapid pulse, confusion, fainting, fatigue, copious perspiration, cool skin that is sometimes pale and clammy, and nausea
- **Heat Stroke**—Hot, dry, flushed skin; delirium; and coma (in some cases).

Resting frequently in a shaded area and consuming large quantities of fresh, potable water and electrolyte replenishing fluids (e.g., Gatorade) can prevent heat stress. If heat exhaustion symptoms are observed, the person will be required to rest in a shaded area and consume liquids. If symptoms are widespread or observed frequently, an appropriate work/rest regimen will be instituted. This may involve limiting the work period so that after 1 minute of rest, a person's heart rate does not exceed 110 beats per minute.

If the heart rate is higher than 110 beats per minute, the next work period should be shortened by 33 percent, while the length of the rest period stays the same. If the heart rate is 110 beats per minute at the beginning of the next rest period, then the next cycle should be shortened by another 33 percent. Resting heart rate should be determined prior to starting onsite activities. A healthy individual's resting heart rate is usually 60–72 beats per minute. If symptoms of heat stroke are observed, the victim will be cooled immediately and transported to the nearest hospital. Workers should not hesitate to seek medical attention if heat stroke is suspected.

3.1.3 Effects of Cold Exposure

Cold stress can be caused by exposure to temperatures at or below freezing or to excessive wind at higher temperatures. When an individual's body temperature falls below 98.6°F, cold stress injuries may occur. The body's cells are composed primarily of water that can freeze when exposed to low temperatures, resulting in cell damage or death. Primary effects of cold exposure include frostnip, frostbite, and hypothermia:

- **Frostnip** commonly occurs as a result of surface tissue freezing at the tips of the ears, nose, cheeks, chin, fingertips, and toes. Symptoms of frostnip include the appearance of white shiny skin. If frostnip occurs, gradually warm the affected areas with a warm hand or warm breath. Do not rub.

- **Frostbite** occurs as the result of surface and subsurface tissues freezing. Symptoms include erythema (abnormal skin redness), blistering, throbbing pain, numbness, and swelling. If frostbite is suspected, move to a warm location and provide slow and steady re-warming.
- **Hypothermia** is the result of prolonged exposure to cold temperatures and body heat loss. Symptoms of hypothermia include body shivers, slow reaction time, mental confusion, glassy eyes, low body temperature, low pulse rate, and difficult respiration. Death can occur within 2 hours if not treated. If hypothermia is suspected, move to a warm location, remove wet and/or cold clothing, and provide re-warming as rapidly as possible. Provide both external heat (fire, electric blanket, body heat) and internal heat (hot liquids for conscious victims). Seek medical attention immediately.

In order to avoid potential cold stress, field personnel should take precautions against the cold and maintain body temperatures. This is most easily done by wearing the proper protective clothing, including insulated head and ear covering, gloves, insulated socks and/or boots, and insulated clothing in layers. If the potential exists for clothing to become wet, then the outer layer of clothing should be water repellent. Clothing that becomes wet with either water or sweat should be replaced immediately. In addition, the work area can be protected by the placement of vehicles or tarps to reduce wind chill.

3.1.4 Heavy Equipment

The use of heavy equipment (e.g., drill rigs, front-end loader, excavator, dozer, dump trucks, vacuum trucks, concrete hauling trucks, generators, compressors, etc.) may pose safety hazards to site workers. Only trained, experienced personnel will conduct heavy equipment work. If possible, personnel must remain outside the turning radius of large, moving equipment. At a minimum, personnel must maintain visual contact with the equipment operator. No guards, safety appliances, or other devices may be removed or made ineffective unless repairs or maintenance are required, and then only after power has been shut off and locked out. Safety devices must be replaced once repair or maintenance is complete. Exhaust from equipment must be directed so that it does not endanger workers or obstruct the view of the operator. When not operational, equipment must be set and locked so that it cannot be activated, released, dropped, etc.

No employee is permitted under loads being handled by lifting equipment. Personnel are required to stand away from any vehicle being loaded or unloaded to avoid being struck by falling material. All personnel will wear high-visibility; reflective vests while onsite to aid in being seen by equipment operators.

3.1.5 Noise

Large equipment often creates excessive noise. Noise can cause workers to be startled, annoyed, or distracted; can cause physical damage to the ear, pain, and temporary and/or permanent hearing loss; and can interfere with communication. If workers are subjected to noise exceeding an 8-hour time-weighted average (TWA) sound level of 85 dBA (decibels on the A-weighted scale), hearing protection will be selected with an appropriate noise reduction rating to comply

with 29 CFR 1910.95 and to reduce noise levels to or below the permissible values. Therefore, during the field activities where workers are using heavy equipment, such as drill rigs, front-end loader, excavator, dozer, dump trucks, vacuum trucks, concrete hauling trucks, generators, compressors, etc., hearing protection must be utilized.

3.1.6 Electrical

Overhead power lines, electrical wiring, electrical equipment, and buried cables pose risks to workers of electric shock, burns, muscle twitches, heart fibrillation, and other physical injuries, as well as fire and explosion hazards. Workers will take appropriate protective measures when working near live electrical parts, including inspection of the work area, to identify potential spark sources, maintenance of a safe distance, proper illumination of the work areas, provision of barriers to prevent inadvertent contact, and use of nonconductive equipment. If overhead lines cannot be de-energized prior to the start of work, a 10-foot distance must be maintained between overhead energized power lines with a voltage of 50 kilovolts (kV) and elevated equipment parts. This distance will be increased 4 inches for every 10 kV greater than 50 kV. For example, workers must maintain a distance of 11.7 feet from energized power lines with a voltage of 100 kV.

3.1.7 Utilities

Underground utilities pose hazards to workers involved in drilling and other invasive operations such as excavation. These hazards include electrical hazards, explosion, and asphyxiation, as well as costly and annoying hazards associated with damaging communication, sewer, and water lines. Prior to commencement of invasive operations, the local one-call utility locating service shall be contacted to inspect and flag the area of investigation, allowing an appropriate amount of time in advance of those operations for the locaters to provide their service.
Personnel should be aware that although an area may be cleared, it does not mean that unanticipated hazards will not appear. Workers should always be alert for unanticipated events such as snapping cables, drilling into unmarked underground utilities, and drilling into a heavily contaminated zone, etc. Such occurrences should prompt involved individuals to halt work immediately and take appropriate corrective measures to gain control of the situation.

As appropriate, a utility location service will be hired to identify and clear buried utilities in areas that are to be assessed.

3.1.8 Weather

Weather conditions should always be taken into consideration. Heavy rains or snowfall, electrical storms, high winds, and extreme temperatures, for example, may create extremely dangerous situations for employees. Equipment performance may also be impaired because of inclement weather. Whenever unfavorable conditions arise, the SHSO will evaluate both the safety hazards and ability of the employees to effectively perform given tasks under such conditions. Activities will be halted at their discretion. Wind direction should be accounted for when positioning equipment at sampling locations. If exposure to organic vapors is anticipated, workers should locate upwind of sampling points. Wind direction often changes abruptly and

without warning, so personnel should always be prepared to reposition, if necessary. Workers should seek safe shelter at the first sound of thunder, when dark threatening clouds develop, or when lightning strikes. Personnel should count the seconds between the time between the sight of lightning and sound of thunder. A safe location is one that has this time duration of approximately 30 seconds. Personnel should stay inside until 30 minutes after the thunder or lightning subsides.

3.1.9 Biological

Any grassy area at the site may be territory for deer ticks or other insects, which may carry Lyme disease. Precautions that will be taken to reduce these hazards are clearing high vegetation within the work zones, minimizing movement through un-cleared areas, wearing long pants while onsite, applying insect repellant to clothing, and checking employees' clothing and bodies for ticks periodically.

Due to the location of the site, the known wild animal species that may potentially be encountered include squirrels, skunks, rats, deer, mice, snakes, armadillos, coyotes, and raccoons. These animals are typically afraid of human beings and will stay away from workers. However, any animal that acts aggressively should be considered dangerous due to the possibility of rabies or potential infections from bites or punctures.

Several residents keep pet dogs outdoors. EA employees should coordinate with each resident prior to entering the property to ensure that any pets are properly secured. Prior to entering the property, personnel should make sufficient noise (speak loudly, shake the fence/gate, whistle, etc.) to draw any outdoor pet's attention.

The following may be used to potentially minimize incidents with pet dogs:

- Remain motionless (e.g., "be still like a tree") when approached by an unfamiliar dog.
- Curl into a ball with your head tucked and your hands over your ears and neck if a dog knocks you over.
- Immediately let the property owner know about stray dogs or dogs that are behaving strangely.
- Do not approach an unfamiliar dog.
- Do not run from a dog.
- Do not panic or make loud noises.
- Do not disturb a dog that is sleeping, eating, or caring for puppies.
- Do not pet a dog without allowing it to see and sniff you first.

Poisonous snakes indigenous to the site area may include the pygmy rattler, water moccasin (cotton mouth), and copperhead. Use care when reaching into or moving objects, be familiar with habits and habitats of snake indigenous to the area, wear knee-high boots or ankle-high boots with snake guards/chaps, chaps as appropriate, and clear grass and overgrown areas, when

possible. If a snake is encountered, stay calm and look around; there may be other snakes in the vicinity. Turn around and walk away along the same path used to approach the area. If a person is bitten by a snake, wash and immobilize the injured area, keeping it lower than the heart if possible. Do not apply ice, cut the wound, or apply a tourniquet. Try to identify the type of snake: note the color, size, patterns, and markings.

Poisonous plants (poison ivy, poison oak, poison sumac, etc.) may potentially be encountered at the site. Precautions should be taken to minimize exposure to plants by clearing vegetation, when necessary, within the work zone and wearing snake boots (if necessary), long-sleeve shirts, pants, safety glasses, and gloves. In addition to the biological and plant life hazards listed above, the following biohazard may be present.

During the site operations, EA employees may be exposed to blood and body secretions in support of emergency response operations where site personnel have been injured, and require first aid and/or cardiopulmonary resuscitation (CPR) – see Section 6.5. Due to the potential that blood and body secretions may contain disease-causing organisms such as the Hepatitis B Virus, and Human Immunodeficiency Virus, employees electing to provide first aid and CPR support (until the arrival of a competent onsite medical responder) should take appropriate measures to reduce or eliminate their potential for contact and exposure. The concept of "Universal Precautions" will be followed, assuming a potential hazard is present. Employees providing first aid support should wear the appropriate PPE to prevent or reduce their potential for contact and exposure. This will typically be accomplished through the use of nitrile gloves, splash-proof eye protection, and the use of mouth-to-mouth guards and proper cleanup (good sanitation and hygiene) following the incident. The hands and face should be thoroughly washed with water and antiseptic soap or cleanser following an incident, or antiseptic-containing disposable towelettes used in the absence of appropriate field washing facilities. The Health and Safety Coordinator should be notified of potential employee exposure to blood and body fluids while conducting work in support of this task order.

3.1.10 Vehicle and Pedestrian Traffic

Traffic at certain sites, particularly active sites in busy areas, presents a hazard to site personnel. Equipment must be located in an area that does not present hazards to bystanders. Barriers must be used to separate the work areas from both vehicle and pedestrian traffic areas and to prevent inadvertent entry of either type of traffic into the work area. Standard traffic cones are not considered adequate for these situations due to their low vertical profile. Taller, 28-inch cones can be effectively modified with warning flags and barricade tape. Barriers demarcating the work area are required even if the site is inactive during work operations.

Employees exposed to public vehicular traffic are required to wear warning vests or other suitable garments marked with or made of reflectorized or high visibility material. In excavation areas, excavated soil materials may be placed between the hole and traffic areas to act as a barrier to both vehicle and pedestrian traffic. Such material must be placed in a manner that will not pose engulfment hazards to either site workers or bystanders.

Adequate precautions and work zone marking should be made to prevent accidents during the period between work shifts.

3.1.11 Water/Drowning Hazard

While working around surface water features, sufficient care must be taken to prevent drowning hazards. Emergency flotation devices (i.e., ring buoys secured to throw lines of appropriate lengths) must be immediately accessible, in good and serviceable condition, and of appropriate size for the intended users. In addition, there will always be two persons while working near surface water features. Please see Section 3.5 Buddy System.

3.2 CHEMICAL HAZARDS

This section identifies known chemical hazards at the site.

3.2.1 Hazard Communication

The SHSO will maintain safety data sheets onsite for each chemical, if any, brought onsite during field activities. Subcontractors must inform the Site Manager/Site Health and Safety Officer of hazardous substances brought onsite, and provide the appropriate safety data sheets to the Site Manager/Site Health and Safety Officer. Chemicals brought onsite must be labeled in accordance with OSHA Hazard Communication Requirements, 29 CFR 1926.59.

3.2.2 Chemical Hazards

Assumptions regarding potential chemical constituents were made by reviewing information from past investigation activities conducted at the site. Based on information provided by EPA, volatile organic compounds and semivolatile organic compounds, and metals associated with historical petroleum refinery operations have been previously detected in various site media.

The Lead Additive Area of the site has been identified as having concentrations above EPA risk-based screening levels for lead, with maximum lead concentrations in excess of 10,000 milligrams per kilogram [mg/kg]) as measured with a field-portable XRF analyzer.

Because of the high lead concentration associated with the Lead Additive Area, and a possibility of the soils in the area potentially being dry, the primary focus for personnel safety and protection is minimizing exposure to organic vapors and particulates from soil and/or sediment. A possibility exists that perched water and surface water encountered while conducting tasks within the Lead Additive Area may exhibit elevated lead concentrations. Therefore, personnel working on the project will be required to take necessary precautions and utilize proper PPE, when conducting any intrusive site activities in the Lead Additive Area that might bring them into contact with, or otherwise expose them to, these media. Monitoring and establishing protection standards for lead will potentially minimize exposure to other heavy metals in various media.

Any newly identified constituents detected during upcoming sampling activities will be

evaluated and, if required, this HSP will be amended to address any new chemical hazards. In the absence of sufficient data, the concept of "Universal Precautions" will be followed, assuming that all potential constituents of concern are present while sampling. Concentrations detected are relatively low, and the likelihood of adverse health effects should be considered equally low.

Potential chemical hazards for Tasks 1 through 21 and their evaluation are summarized in Table 3.

TABLE 3. CHEMICAL HAZARD EVALUATION

Compound	Exposure Limits (Time Weighted Average)		Threshold Limit Value	ACGIH TLV	Routes of Exposure	Symptoms (Acute)	Dermal Hazard
	OSHA PEL (Adjusted for 10-hour Work Day)	NIOSH Recommended Exposure Limit					
Arsenic	0.01 mg/m^3 Action Level 0.005 mg/m^3 (0.008 mg/m^3)	0.002 mg/m^{3}C (15 minutes)	0.010 mg/m^3	Carcinogen 5 mg/m^3	Inhalation Ingestion Skin/eye contact	Ulceration of nasal septum, dermatitis, gastrointestinal bleeding.	Yes
Asbestos	1 fiber/cm^3 for 30 minutes	0.1 fiber/cm^3	0.1 f/cc		Inhalation, Ingestions, skin and/or eye contact	Asbestosis (chronic exposure), dyspnea (breathing difficulty), interstitial fibrosis, restricted pulmonary function, finger clubbing, irritated eyes, carcinogen	Yes
Benzene	0.5 ppm/2.5 ppm			Carcinogen 500 ppm	Inhalation Ingestion Absorption Skin/eye contact	Irritated eyes, nose, skin, respiratory system, nausea, headache, fatigue, dermatitis	Yes
Water-soluble Chromium VI	0.005 mg/m^3			0.05 mg/m^3	Skin absorption Skin/eye contact	Irritation respiratory system; nasal septum perforation; liver, kidney damage; leukocytosis (increased blood leukocytes), eucopenia (reduced blood leukocytes), eosinophilia; eye injury, conjunctivitis; skin ulcer, sensitization dermatitis; potential occupational carcinogen	Yes
Coal Tar Pitch Volatiles [a] (pyrene, phenanthrene, acridine, chrysene, anthracene, and benzo[a]pyrene)	0.2 mg/m^3 (benzene-soluble fraction)			0.2 mg/m^3 (benzene-soluble fraction)	Inhalation Skin/eye contact	Dermatitis, bronchitis, potential occupational carcinogen	Yes
Lead (and inorganic compounds as lead)	0.050 mg/m^3 (0.040 mg/m^3)		0.050 mg/m^3	0.050 mg/m^3	Inhalation Ingestion Skin/eye contact	Lassitude, insomnia, pallor, anoxia, weight loss, constipation, abdominal pain, colic, anemia, wrist paralysis.	Yes

Compound	Exposure Limits (Time Weighted Average)		Threshold Limit Value	ACGIH TLV	Routes of Exposure	Symptoms (Acute)	Dermal Hazard
	OSHA PEL (Adjusted for 10-hour Work Day)	NIOSH Recommended Exposure Limit					
Lead (in dust)	0.050 mg/m^3 (0.040 mg/m^3)	0.050 mg/m^3	0.050 mg/m^3		Inhalation, ingestion, skin and/or eye contact	Insomnia, facial pallor, abdominal pain, constipation, colic, anemia, irritation eyes, hypotension, kidney disease, paralysis wrist, ankles	Yes
Particulate matter (total)	15 mg/m^3 (12 mg/m^3)				Inhalation, skin and/or eye contact	Irritation eyes, skin, throat, upper respiratory system	Ye
Particulate matter (respiratory)	5 mg/m^3 (4mg/m^3)				Inhalation, skin and/or eye contact	Irritation eyes, skin, throat, upper respiratory system	Yes
Toluene	20 ppm Ceiling 300 ppm			500 ppm	Inhalation Ingestion Absorption Skin/eye contact	Irritated eyes, nose; fatigue, weakness, confusion, euphoria, dizziness, insomnia, nervousness, muscle fatigue, dermatitis	Yes
Xylene	100 ppm/150 ppm			900 ppm	Inhalation Ingestion Absorption Skin/eye contact	Irritated eyes, nose; fatigue, weakness, confusion, euphoria, dizziness, insomnia, nervousness, muscle fatigue, dermatitis	Yes

NOTES:
[a] NIOSH considers coal tar, coal tar pitch, and creosote to be coal tar products.
ACGIH = American Conference of Governmental Industrial Hygienists
ACGIH Threshold Limit Value (TLV) – Time-weighted average (TWA) concentration for up to an 8-hour workday during a 40-hour workweek.
mg/m^3 = milligram(s) per cubic meter
NIOSH = National Institute for Occupational Safety and Health
OSHA = Occupational Safety and Health Administration
OSHA Permissible Exposure Limit (PEL) – TWA concentration for up to an 8-hour workday during a 40-hour workweek. OSHA PELs were adjusted to provide site-specific exposure levels for a TWA 10-hour workday.
Exposure Limits will also include the evaluation of site-specific background contributions, which will be determined onsite.
ppm = part(s) per million

3.2.3 Chemicals for Equipment Calibrations and Operations

The following chemicals are typically supplied by the primary field program team:

- Alconox® or Liquinox®
- Conductivity calibration standard solution
- Hydrochloric acid (sample preservative)
- Hydrogen gas
- Isobutylene calibration gas
- Isopropyl alcohol
- Methane calibration gas
- Nitric acid (sample preservative)
- pH calibration standard solution
- Sodium hydroxide (sample preservative)
- Sulfuric acid (sample preservative)
- Zinc acetate (sample preservative).

The following chemicals are typically supplied by the driller:

- Portland cement
- No. 2 silica sand
- Sodium bentonite
- Gasoline
- Diesel.

These chemicals will be used for equipment calibrations/operations, decontamination, well construction, and cleaning. The decontamination wastewater will be containerized as part of the investigation-derived waste and disposed offsite or treated onsite, as required. Portland cement, No. 2 silica sand, and sodium bentonite are typically used for well construction and plugging and abandonment activities. Chemicals used during the field activities will be properly contained and labeled. Occupational exposures will be negligible. Chemicals for preservation of samples will be handled in such a way that there is no exposure to these chemicals. Laboratory supplied sample jars with preservatives will be used to prevent handling of preservatives in the field. In addition, gasoline and diesel may be stored temporarily onsite in small quantities for the heavy equipment.

3.3 SAFE WORK PRACTICES

Safe work practices that must be followed by site workers include:

- The cleaning of hands immediately or as soon as feasible after removal of gloves by the use of antiseptic cleanser in conjunction with clean paper towels.
- The washing of hands and any other exposed skin with antiseptic cleanser and water immediately or as soon as feasible following contact with blood or other potentially infectious material. Staff shall also wash hands:
  - After removing PPE
  - After handling potentially infectious materials

  - After cleaning or decontaminating equipment
  - After using the bathroom
  - Before eating
  - Before and after handling or preparing food.
- Eat and drink only in those areas designated by the Site Health and Safety Officer. These activities will not take place within work zones.
- In the event a potential for chemical contamination exists onsite, employees will wash and conduct appropriate decontamination activities.
- Wear appropriate PPE all the time.
- Defective PPE must be repaired or replaced immediately.
- Each employee required to take prescription drugs will notify the Site Manager and/or Site Health and Safety Officer prior to the start of work. Controlled or unauthorized drugs will **not** be permitted onsite at any time.
- All procedures for sampling and/or analysis shall be performed in such a manner as to minimize splashing, spraying, spattering, and generation of droplets. The slow and careful transfer of all potentially infectious liquids will accomplish this.
- All potentially infectious materials shall be placed in a clearly marked container, which prevents leakage during collection, handling, and transporting.
- If outside contamination of the primary container occurs, the primary container shall be placed within a second container, which prevents leakage during handling and transporting.
- Equipment that may become contaminated will be decontaminated as necessary.

3.4 ENVIRONMENTAL MONITORING

Environmental monitoring will include sufficient monitoring of air quality in work zones during intrusive field operations to assess levels of employee exposure and to verify that the level of PPE being worn by personnel is adequate. Site-specific monitoring requirements and action levels are provided in Table 4.

Only those employees who have been trained in the proper operation, use limitations, and calibration of the monitoring equipment will operate instruments. Direct-reading instruments will be calibrated prior to use on a daily basis following the instrument manufacturer's guidance. Calibration will be properly recorded in the field logbook to show the date, calibration material type and concentration, and the actual reading obtained. Equipment failing to meet the manufacturer's standards for accuracy and repeatability will be considered suspect and replaced with an alternate, properly functioning piece of equipment. Instructions in the manufacturer's operations manual regarding storage, cleaning, and maintenance of the instruments will be followed.

3.4.1 Personnel Air Monitoring and Sampling

Employees working in the Lead Additive Area have the highest likelihood of exposure to organic vapors and airborne contaminant concentrations of lead, which may exceed established exposure

limits. Therefore, selective monitoring and sampling of these workers will be conducted during activities within the Lead Additive Area. Due to the possibility of established exposure limits being exceeded in the Lead Additive Area, Level C respiratory protective equipment will be required for all personnel working in the Lead Additive Area until personnel air sampling data can be evaluated against the applicable OSHA PEL. Personnel monitoring and sampling will be conducted in the breathing zone.

Personnel air monitoring and sampling will be continuous while working in the Lead Additive Area to ensure worker protection until activities are completed for the scheduled field tasks. Personnel air samplers containing filters will be analyzed for lead. In addition, as discussed in Section 3.4.3, MIE Personnel DataRAM air monitors will also be used to monitor real-time particulate matter concentrations.

Level C respiratory protective equipment will also be required for personnel making initial entry into the vacant church (Lorraine Process Area); hydrocarbon fumes were reported in the past by previous residents. Entry personnel will monitor VOC concentrations in ambient air using a photoionization and/or flame ionization detector (PID/FID) to determine if continued use of respiratory protection is warranted. If VOC concentrations exceed action levels, respiratory protection will be required during the vapor intrusion investigation.

Air monitoring will be performed in the Lead Additive Area, the vacant church, or other similar areas encountered as the situations listed below warrant:

- Work begins within an area of the Lead Additive Area or area encountered that may exhibit similar characteristics of the Lead Additive Area
- Contaminants other than lead are encountered
- A different field task is initiated
- Workers required to handle leaking containers or required to work within obvious liquid contamination
- Obvious lithologic changes are noticed during scheduled field tasks
- Workers experience physical difficulties.

To ensure that the evaluation of the contaminant emissions of scheduled field tasks within the Lead Additive Area are comparable, several upwind and background measurements will be collected.

3.4.2 Air Sampling Protocols – Lead Additive Area

Personnel air samplers will contain a filter that will be sent to a laboratory for lead particulate analyses. Airborne lead samples will be collected using NIOSH Method 7300. Air sampling parameters will be recorded on an Air Sampling Data Sheet (see Appendix E).

Personnel samples will be collected from representative workers performing various tasks within the Lead Additive Area. This will include, but not be limited to, drilling, Geoprobe ® boring, soil sampling, sample preparation, etc. To ensure worker safety in the Lead Additive Area, all

workers will be required to use respirators equipped with P100 filters. As added measure, results from the personnel air sampling will be compared to the applicable OSHA PEL for lead, as shown in Table 4 to ensure employees are using correct level of respiratory protection.

Upon receipt of the personnel air sampler sample results within a few days of sampling, the SHSO will evaluate the data against the applicable OSHA PEL. If the data indicates that airborne lead is less than ½ the PEL and organic vapors are within acceptable levels, the SHSO may discontinue respiratory protection and personal air sampling activities, with concurrence from Corporate Health and Safety Director, or designee. This personal air sampling will be augmented with real-time air monitoring for particulates.

3.4.3 Air Monitoring Protocols – Lead Additive Area

MIE Personnel DataRAM Aerosol Monitor (DataRAM) air monitors will be used to monitor particulate matter concentrations during each scheduled task taking place in the Lead Additive Area to ensure worker protection. These units are passive air monitors that are worn near the breathing zone and have the capability of providing real-time particulate concentration values and can be set to sound an alarm when a pre-determined concentration (e.g., action level) has been reached or exceeded.

Specific air monitoring requirements and action levels for the Lead Additive Area are listed in Table 4. The following is a discussion of parameters that will be monitored under this program, as well as the rationale in developing action levels. Air monitoring parameters will be recorded on an air sampling data sheet (see Appendix E).

Inert or Nuisance Dust

The OSHA PEL for inert or nuisance Total Dust is 15 mg/m^3. The OSHA PEL for inert or nuisance Respirable Dust is 5 mg/m^3. Both of these values are based on an 8-hour day time weighted average (TWA) exposure. Because it is likely that personnel will be will be working 10-hour days in the Lead Additive Area, these OSHA PELs were adjusted to 12 mg/m^3 for Total Dust and 4 mg/m^3 for Respirable Dust. The MIE Personal DataRAM Aerosol Monitor (DataRAM) has a measurement range from 0.001 to 400 mg/m^3 and measures particle sizes from 0.1 to 10.0 µm. Particulates with sizes of 10.0 µm or less are respirable. Therefore the Adjusted OSHA PEL for Respirable Dust of 4 mg/m^3 is an appropriate air monitoring measurement standard for inert or nuisance dust.

TABLE 4. SITE-SPECIFIC MONITORING REQUIREMENTS

Monitoring Device	Activity	Hazard	Action Level	Monitoring Frequency	Action
Personal air sampling using NIOSH 7300	14	Lead (particulates)	<0.020 mg/m^3	10-hour workday (adjusted)	Use Level D PPE.
			0.020 mg/m^3 – 0.04 mg/m^3		Use half-mask air-purifying respirator (APR) with high efficiency filters.
			0.04 mg/m^3 – 2 mg/m^3		Use full-face APR with high efficiency filters.
			2 mg/m^3 – 40 mg/m^3		Use (1) powered APR with high efficiency filters; or (2) half-mask supplied-air respirator operated in positive pressure mode.
			40 mg/m^3 – 80 mg/m^3		Use supplied-air respirators with full-face piece, hood, helmet, or suit, operated in positive pressure mode.
Visual	1 through 21	Lead Airborne Concentrations	Visible dust	Continuous in Lead Additive Area	Dust suppression. If dust not controlled then Level C PPE
Photoionization detector Flame ionization detector	5, 9, 10, 13, 14, 15, 16, and 21	Organic vapors	Background to 5 ppm	Every 30 minutes initially, and as required by a change in site activity	Level D PPE
			5-50 ppm	Every 30 minutes initially, and as required by a change in site activity	Level C PPE
			>50 ppm	Not applicable	Stop work and evacuate; reevaluate
Rule of thumb method	2, 9, and 15	Noise	Must shout to be heard at arm's length	When needed	Wear hearing protection
Personal air sampling using NIOSH 7082	14	Particulates	0 – 2.0 mg/m^3		Continue work.
			2.0 – 4.0 mg/m^3	10-hour workday (adjusted)	Use Level C PPE and implement dust suppression activities.
			> 4 mg/m^3		Stop work activities and implement dust suppression activities. Results of the personal air sampling will not be available until 3-7 days after exposure; therefore, action levels for the real-time particulate monitor will be used until data from the personal sampling is available.

TABLE 4. SITE-SPECIFIC MONITORING REQUIREMENTS

Monitoring Device	Activity	Hazard	Action Level	Monitoring Frequency	Action
MIE Personnel DataRAM Monitor	14	Particulate Matter Monitor (real-time)	1 mg/m^3	1 minute per TWA	Temporarily cease activity; notify PM and SHSO; evaluate modification of work leading to air quality deviation. ***If the 1-minute TWA concentration of dust in the air equals or exceeds 1 mg/m^3, either worker respiratory protection measures will be enacted (e.g., respirators) or engineering controls will be employed (e.g., rain curtain) to mitigate particulate generation and reduce worker exposure.*** ***Workers may not be exposed to1-minute TWA concentrations of airborne dust exceeding the 1 mg/m^3level unless wearing respiratory protection (e.g., half-face APR).***
			5 mg/m^3	1 minute per TWA	Temporarily cease activity; notify PM and SHSO; evaluate modification of work leading to air quality deviation. ***If the 1-minute TWA concentration of dust in the air equals or exceeds 5 mg/m^3, the activity should be halted and the PM and SHSO should be notified of this condition. Activity should be evaluated for possible modification.***

TABLE 4. SITE-SPECIFIC MONITORING REQUIREMENTS

Monitoring Device	Activity	Hazard	Action Level	Monitoring Frequency	Action

NOTES:
PPE = personal protective equipment
ppm = part(s) per million per volume
Field Activities:

1. Site reconnaissance
2. Site preparation, including clearing and chipping activities
3. Private water supply well search
4. Wetland survey/delineation
5. Waste area delineation using GPS equipment
6. Survey of seep locations and collection of elevation measurements
7. Suspected ACM survey
8. NORM/TENORM survey of aboveground auxiliary equipment/structures.
9. Subsurface soil boring activities
10. Surface and subsurface soil sampling
11. Sediment and surface water sampling
12. Private water supply well sampling
13. Vapor intrusion sampling
14. Intrusive field activities in the Lead Additive Area
15. Monitoring well installation and development
16. Monitoring well sampling
17. Ground water elevation measurements of monitoring/piezometer wells
18. Surveying of monitoring/piezometer wells
19. Aquifer testing
20. Biota sampling (e.g., fish, invertebrates, and plants) (if warranted)
21. Management of IDW.

Heavy Metals

It has been identified that the Lead Additive Area is impacted with the heavy metal lead, requiring an appropriate air monitoring measurement standard for the area. An evaluation of recent XRF data concluded that lead is the most potential deleterious metal in the Lead Additive Area and worker protection standards for lead will ensure workers are not exposed to lead above their respective OSHA PELs. The use of maximum concentrations in the following calculations is considered conservative since workers are exposed to average concentrations over time; therefore, additional worker protection factors are not necessary in the following calculations.

Lead

The maximum concentration of lead in soil detected via XRF at the Lead Additive Area exceeded 10,000 mg/kg; actual soil and ground water concentrations will be determined and verified during the upcoming field program. The adjusted OSHA PEL for lead will be determined when data is acquired during the upcoming field program. If it is assumed that lead in the respirable fraction of dust in air is similar to the maximum detected concentrations in soil, workers could be exposed to respirable dust particulates without exceeding the OSHA PEL for lead.

Final Air Monitoring Measurement Standard

The Respirable Dust air monitoring measurement standard for the Lead Additive Area will be established in the field during the during the upcoming field program when soil and ground water data are available. If the TWA concentration of dust in the air exceeds 1 mg/m^3 for a duration of 1-minute, then either worker respiratory protection measures will be enacted (e.g., respirators) or engineering controls will be employed (e.g., rain curtain) to mitigate particulate generation and reduce worker exposure. Air monitoring levels may be adjusted if additional site-specific information is obtained during the investigation.

However, organic vapor concentrations encountered may possibly require full time usage of the appropriate respiratory protection regardless of being exposed to acceptable levels of respirable dust particulates.

3.5 FIELD TASK MONITORING

Safety procedures will be followed and enforced to protect onsite personnel and the public during field activities during each task performed on Site. Personnel air monitoring and sampling will be performed continuously while in the Lead Additive Area to ensure worker protection in accordance with Section 3.4. Long-sleeve shirts may be worn as appropriate to mitigate dermal exposure to site contaminants.

3.5.1 Site Reconnaissance

Field activities for this task include locating sampling locations for various types of media and buried utility location surveys. Exposure to contaminants during this task is anticipated to be low. However, weather conditions and task-related activities will be monitored. At a minimum, PPE for this task will include safety glasses and steel-toed boots. Chemical-resistant gloves and hard-hats will be worn, as appropriate.

3.5.2 Drilling

Subsurface soil samples will be collected and monitoring wells will be installed using hollow-stem auger (HSA) drilling methodology. Exposure to dust and high concentrations of airborne particulates is not anticipated when HSA drilling is occurring. At a minimum, PPE for activities associated with this task will include hard hats, steel-toed boots, safety glasses, work gloves, hearing protection, and reflective vests. Chemical-resistant gloves will be worn any time there is the chance for workers to come into contact with contaminated soil and/or water.

A determination should also be made regarding prevailing winds prior to, and during, drilling operations; support equipment and non-critical personnel should be situated in a location that is upwind from the drilling location. If at any time excessive dust is encountered during drilling activities, an apron or bag that minimizes dust generation while drilling should be used. If intrusive work is conducted in the Lead Additive Area, the appropriate respiratory protection must be worn.

3.5.3 Soil Sampling – Direct-push Technology

Subsurface soil samples will be collected using direct-push technology (DPT). Although dust is expected to be minimal during DPT activities, subsurface samples may be collected from areas known to contain high lead concentrations. At a minimum, PPE for activities associated with this task will include hard hats, steel-toed boots, safety glasses, work gloves, hearing protection, and reflective vests. Chemical-resistant gloves will also be worn any time there is the chance for workers to come into contact with contaminated soil and/or water. If intrusive work is conducted in the Lead Additive Area, the appropriate respiratory protection must be worn.

A determination should also be made regarding prevailing winds prior to and during DPT operations; support equipment and non-critical personnel should be situated in a location that is upwind from each DPT location.

3.5.4 Vapor Intrusion and Air Sampling

During the collection of vapor and air samples, exposure to contaminants is expected to be moderate to high depending on the location. Prior to entry into any unoccupied building structure that has been sealed for an extended period of time, Level C PPE (i.e., appropriate respiratory protection, steel-toed boots, safety glasses, and chemical-resistant gloves) will be

required for activities associated with this task. Respiratory protection may be downgraded once ambient air has been properly characterized, and monitoring indicates concentrations of volatile contaminants below appropriate action levels. In addition to PPE, an oxygen meter will be used while working within any unoccupied building structure that has been sealed for an extended period of time.

3.5.5 Sediment and Surface Water Sampling

During the collection of sediment samples, exposure to contaminants is expected to be low to moderate depending on the location and moisture content of the sediment. Exposure to contaminants during sediment and surface water sampling is anticipated to be low, as long as proper PPE is worn to prevent dermal contact with sediment and surface water. At a minimum, PPE for activities associated with this task will include steel-toed boots, safety glasses, and chemical-resistant gloves.

3.5.6 Ground Water Sampling

Ground water samples will be collected from private water supply and monitoring wells. Ground water samples are expected to contain low concentrations of contaminants. Sampling personnel will be cautious of site terrain, traffic, pedestrians, and animals during sampling activities. At a minimum, PPE for activities associated with collection of ground water samples will include steel-toed boots, safety glasses, and chemical-resistant gloves.

3.5.7 Naturally-occurring Radioactive Material/Technologically-enhanced Naturally-occurring Radioactive Material (NORM/TENORM)

EA will conduct a preliminary NORM/TENORM survey of potential source areas to determine the need for additional investigation. At a minimum, PPE for activities associated with the NORM/TENORM survey will include steel-toed boots, safety glasses, and chemical-resistant gloves.

3.5.8 Asbestos

A preliminary survey of suspected asbestos-containing material (ACM) will be conducted by a subcontractor and supervised by EA. At a minimum, PPE for activities associated with the survey will include steel-toed boots, safety glasses, and chemical-resistant gloves. *Note: although not anticipated, respiratory protection will be mandatory for all activities involving the disturbance or sampling of ACM.* Personal air sampling/monitoring will also be conducted in accordance with Section 3.4.

3.5 BUDDY SYSTEM

Where practical, work at the site will be scheduled so that no employee works alone at any time. Each worker will either maintain a visual contact or audial contact (via two-way radios) with another specified worker at all times. The buddy system will ensure against an employee becoming stressed without a coworker being aware of his or her condition. Workers must

"watch out" for each other while working close to potential chemical and physical hazards. Where practical, this fellow worker/observer must keep his/her partner in his/her line of sight at all times and be prepared to immediately assist in case of emergencies.

If a telephone is not immediately available for emergency use, an alarm or horn should be sounded to summon further help from others on the job site.

4. EMPLOYEE TRAINING

This section describes employee training procedures.

4.1 SITE PERSONNEL

Personnel who will be performing RI-related non-hazardous onsite tasks are not required to have been trained according to U.S. Department of Labor OSHA Standard, 29 CFR 1926.65, *Hazardous Waste Operations and Emergency Response.* These workers will have equivalent health and safety training based upon their specific job tasks and activities.

The Site Health and Safety Officer and personnel conducting the field activities will be trained as required to meet the U.S. Department of Labor OSHA Standard, 29 CFR 1926.65, *Hazardous Waste Operations and Emergency Response,* to qualify as hazardous waste site workers and supervisor. Training will include:

- A minimum of 40 hours of initial offsite instruction
- A minimum of 3 days of actual field experience under the direct supervision of a trained, experienced supervisor
- An 8-hour "refresher" training period annually
- Additional training that addresses unique or special hazards/operational requirements
- At least one person onsite at any time must be currently trained in first aid and CPR.

Onsite management and supervisors who are directly responsible for or who supervise employees will receive at least 8 additional hours of specialized management training.

In addition, personnel operating heavy equipment (e.g., front end loader, excavator) will be specifically trained in their operation. Personnel will be trained in the operation of hand-held tools and in general operations at a construction site. EA will ensure that personnel are properly trained, and will provide training where necessary.

Copies of training certificates and dates of attendance will be available through the SHSO upon request.

4.1.1 Subcontractor Training

Prior to start of work operations, the Project Manager will obtain a written list of subcontractor personnel to be onsite and written certification from subcontractor management that these workers meet the training requirements for their assigned tasks.

4.1.2 Pre-Entry Orientation Session

Prior to entering the site, personnel will attend a pre-entry orientation session presented by the SHSO. Personnel will verify attendance of this meeting by signing the review record provided in Attachment A. Visitors entering designated work areas will be subject to applicable health and safety regulations during field operations at the site. The Site Manager/Site Health and Safety Officer is responsible for briefing the personnel onsite of potential hazards that may be encountered on the site, the presence and location of the site HSP, and emergency response procedures. Visitors will be under the direct supervision of the Site Manager/Site Health and Safety Officer his/her representative.

At a minimum, the pre-entry orientation session will discuss the contents of this HSP and will discuss the following items:

- Nature and degree of potential health and safety hazards associated with each planned task
- PPE to be worn for each task
- Decontamination procedures
- Training and medical surveillance requirements
- Safe work practices
- Emergency procedures.

A question and answer period will also be provided.

4.2 MEDICAL SURVEILLANCE

Hazardous waste site workers must have satisfactorily completed a comprehensive medical examination by a licensed physician within 12 months (or 24 months pending physician's approval) prior to the start of site operations. Subcontractors will provide this information in writing to the Project Manager for their workers prior to mobilization onsite. This information will be available onsite.

A licensed physician who is certified in Occupational Medicine by the American Board of Preventative Medicine will review medical surveillance protocol and examination results. Medical surveillance protocols will comply with 29 CFR 1926.65. The content of medical examinations will be determined by the attending physician and will be based upon the guidelines in the *Occupational Safety and Health Guidance Manual for Hazardous Waste Site*

Activities. Medical examinations and consultations will be provided for employees covered by this program on the following schedule:

- Prior to field work assignment
- At least annually for employees covered by the program (or biennial with the approval of the occupational physician)
- At termination of employment or reassignment to an area where the employee would not be covered if the employee has not been examined within the past 6 months
- As soon as possible upon the development of signs or symptoms that may indicate an overexposure to hazardous substances or other health hazards, or that an unprotected person has been exposed in an emergency situation
- More frequently if the physician deems such examination necessary to maintain employee health.

An accurate record of the medical surveillance will be maintained for each employee for a period of no less than 30 years after the termination of employment. Records will be managed and maintained per recordkeeping provisions of EA's Safety and Health Program Manual (EA 2015a). Records must include at least the following information about the employee:

- Name and Social Security Number
- Physician's written opinions, recommendations, limitations, and test results
- Employee medical complaints related to hazardous waste operations
- Information provided to the physician by the employee concerning possible exposures, accidents, etc.

4.2.1 Site-Specific Medical Monitoring

For field activities at the site, field personnel who may potentially be exposed to particulate lead will participate in a blood-lead monitoring program, in accordance with the OSHA Lead Rule 40 CFR 1910.1025 and 1926.62.

A baseline blood sample will be required for each field employee scheduled to perform intrusive work in the Lead Additive Area, and follow-up testing will be conducted. If the results from two consecutive samples show blood-lead concentrations within 10 percent of baseline, blood-lead monitoring can be discontinued for that employee. Should an employee's blood-level exceed 30 micrograms (µg) lead/100 milliliters (ml) of blood, the employee's medical case will be managed by EA's medical surveillance provider. If the follow-up blood-lead concentration is below 30 µg lead/100 ml of blood, the employee may be allowed to return to work in contaminated areas. The SHSO, in coordination with the EA Corporate Health and Safety Director, will maintain the records and monitor employees.

A baseline sample and follow-up will be required for each field employee that spends more than 7 days conducting intrusive activities (e.g., sampling using a DPT or HSA drilling methods in the Lead Additive Area). Personnel that are conducting intrusive activities in Lead Additive Area will be preferentially scheduled so that they are not conducting intrusive activities for more than 30 days of fieldwork, which is the requirement for medical monitoring. Nevertheless, personnel that spend more than 7 days conducting intrusive activities (e.g., soil sampling using a DPT or HSA drilling methods in the Lead Additive Area) will undergo blood-lead testing and monitoring.

4.3 HAZARD COMMUNICATION PROGRAM

EA's hazard communication program consists of hazard communication, hazard communication labeling, safety data sheets, and hazard communication training. Each of these elements is further explained below.

4.3.1 Hazard Communication

The SHSO will conduct regularly scheduled safety meetings with site workers to discuss the planned activities, since these activities and workers may change over the duration of the task order. The objective of instituting a Hazard Communication Program is to ensure that hazards associated with the site and with chemicals brought onsite by EA or subcontractors are evaluated, and that information concerning these hazards is transmitted to site employees. Site personnel include EA and subcontractor employees, manufacturer's representatives, or local agency employees, and other workers who observe or perform services onsite. Employee awareness of chemical identities, health and physical hazards, properties, and characteristics is essential to safely handle chemicals and to minimize potential hazards. The Hazard Communication Program must follow OSHA requirements listed in 29 CFR 1926.59.

4.3.2 Hazard Communication Labeling

The SHSO will ensure that containers are properly labeled and that workers know the contents of containers. Container labels will contain, at a minimum, information on name of product on container, chemical(s) in product, manufacturer's name and address, protective equipment required for the safe handling of the product, and first aid procedures in case of overexposure to product contents.

4.3.3 Safety Data Sheets

The SHSO will maintain a current alphabetical file of complete safety data sheets for each hazardous substance brought to, stored, or used at the work site. The file must be easily accessible to all employees. Subcontractors and visitors to the work place will be informed of the existence and location of this file. Workers and visitors will be instructed on how to read and understand the information shown on the safety data sheets. Subcontractors must inform the SHSO about hazardous substances that they bring onsite and provide safety data sheets.

4.3.4 Hazard Communication Training

Site workers and visitors will be informed of the Hazard Communication Program, their legal rights under the program, the location of the chemical inventory, and the location of the safety data sheets file. Prior to site work or potential exposure to hazardous substances, the SHSO will describe hazardous substances routinely used and provide information about:

- Nature of potential chemical hazards
- Appropriate work practices
- Appropriate control programs
- Appropriate protective measures
- Methods to detect presence or release of hazardous substances
- Emergency procedures.

5. PERSONAL PROTECTIVE EQUIPMENT

This section describes the requirements, maintenance, and inspection of PPE.

5.1 PERSONAL PROTECTIVE EQUIPMENT REQUIREMENTS

Based upon currently available information and the nature of the anticipated tasks, the level of protection selected for work tasks is Level D with the exception of intrusive work in the Lead Additive Area, initial entry into the vacant church, and the asbestos survey.

In the event that potential chemical hazards are identified, the level of protection may be upgraded appropriately to the potential hazard conditions by SHSO. Only those personnel identified and qualified for hazardous waste work as defined in 29 CFR 1926.65 will be allowed to upgrade beyond Level D or provide support of hazardous material/substance contingency operations. Only the SHSO, in conjunction with the Health and Safety Coordinator and Project Manager, will be allowed to approve PPE upgrade beyond Level D and site re-entry for the purpose of hazardous conditions assessment.

The following is a list of the Level D PPE components for the minimum level of protection authorized for use during this task order:

- Coveralls or appropriate work clothes.
- Steel-toe, steel-shank safety boots/shoes.
- Hard hats (if overhead hazards are present).
- Chemical resistant gloves (neoprene or nitrile) as appropriate to prevent contact during sample collection activities.
- Leather or cloth work gloves (as needed).

- Safety glasses with side shields and face shield (as needed) or impact-resistant chemical goggles; safety glasses, goggles, and face shields will meet American National Standards Institute requirements for impact resistance and safety.
- Hearing protectors (as needed). Note: hearing protection must be available and must be worn whenever noise levels exceed 85 dBA (noise level at which a shouted conversation cannot be understood at a 1-foot distance).
- High visibility reflective vests (traffic and/or heavy equipment operations).

As indicated in Section 3.4 and on Table 4, both air purifying respirators and Personnel DataRAM monitors will be mandatory for intrusive activities in the Lead Additive Area. Real-time monitoring data from the Personnel DataRAM monitors will be used to detect a particulate dose equaling or exceeding 1 mg/m^3. The minimum respiratory protection for this condition will be a half-mask respirator with a protection factor of 10. Respiratory protection/monitoring will be mandatory for all activities involving the handling/disturbance of suspected ACM.

5.2 MAINTENANCE AND IN-USE INSPECTION OF PERSONAL PROTECTIVE EQUIPMENT

Effective use of protective equipment requires that the equipment be properly used, maintained, and inspected periodically during the day. Site-specific issues and standard procedures will be reiterated during pre-entry training. Gloves and body coverings will be regularly inspected and replaced promptly if torn. Disposable coveralls will be replaced daily at a minimum. Reusable gloves will be decontaminated whenever exiting the area.

Proper maintenance and storage of respiratory protection is crucial in protecting worker safety. Respirators should be inspected for defects/damage and properly cleaned and stored after each use as follows:

- Utilize nitrile gloves during cleaning to reduce contact with skin.
- Remove filters and cartridges.
- Examine the respirator for any damaged/defective parts. Follow the respirator manufacturer's instructions when replacing or repairing any defective parts.
- Wash respirator (without cartridges) in warm water with a mild detergent or with a cleaner recommended by the manufacturer. Do not use strong detergents, hot water or solvents that may dissolve rubber parts. A stiff bristle (not wire) brush may be used to remove dirt.
- Rinse respirator parts thoroughly in clean, warm water; drain the respirator.
- Use a sanitizing pad specifically intended for respirator use to sanitize the respirator.

- Re-rinse the respirator thoroughly in clean, warm water. (Detergents or sanitizers that dry on face-pieces may result in skin irritation. In addition, some sanitizers may cause deterioration of rubber or corrosion of metal parts if not completely removed.
- Components should be dried with a clean, lint-free cloth or air dried.
- Reassemble the respirator face-piece.
- Test the respirator to ensure that it works properly.
- Store respirators in a clean resealable bag, separate from cartridges
- Store cartridges in a separate clean resealable bag.
- All items should be stored away from sunlight, solvents, extreme cold or heat, and excessive moisture.

Maintain and inspect respirators routinely according to manufacturer's instructions. Particulate cartridges should be replaced when breathing becomes difficult. As a general rule, in moderately dusty or misty conditions, it is reasonable to expect about four hours of useful life for cartridges.

6. EMERGENCY RESPONSE AND REACTION TO SITE CONTINGENCIES

This section describes emergency procedures for the site.

6.1 EMERGENCY RECOGNITION

Prior to work startup, personnel must be familiar with emergency condition identification, notification, and response procedures.

The emergency telephone numbers for local emergency response and reporting organizations are provided in Table 5. Figure 2 presents directions to the nearest hospital.

TABLE 5 EMERGENCY TELEPHONE NUMBERS

Organization	Phone Number
Emergency – Ambulance	911 or (918) 367-5567
Bristow Fire Department	911 or (918) 367-3415
Bristow Police Department	911 or (918) 367-2251
Bristow Public Works (Water Department)	(918) 367-2454 (918) 367-2252 (After hours)
Poison Control Center	(800) 222-1222
Hospital – Bristow Medical Center 700 W. 7th Ave. Bristow, OK 74010	(918) 367-4424 (Emergency Room) (918) 367-2215 (Main)

Directions to Hospital:

From the site:

1. Depart W. 221st Street South (Refinery Road) towards McDonald Dr. 0.7 mi
2. Turn left onto OK-16 E / OK-48 S / OK-66 S 0.2 mi
3. Straight onto OK-16 E / OK-48 S / OK-66 S 0.5 mi
4. Turn right on W. 7th Street 0.5 mi
5. Straight on W. 7th Street 161 ft
6. Arrive at Bristow Medical Center

Name	Position	Work Phone	Cell Phone
EA Project Personnel			
To be determined	Site Manager/Site Safety Health Officer	---	---
To be determined	Site Manager	---	---
Tim Startz	Program Manager	(972) 315-3922	(214) 616-7027
Pete Garger	Program Health and Safety Officer	(410) 527-2425	(410) 790-6338
Teri McMillan	Project Manager	(505) 224-9013	(505) 259-6779
Luis Vega	Alternate Project Manager	(972) 459-5040	(214) 280-9031
Brian Yost	Office Health and Safety Coordinator	(972) 315-3922	(214) 906-0253
EPA Project Personnel			
Katrina Higgins-Coltrain	EPA TOM/RPM	(214) 665-8143	---
Thomas Kady	EPA ERT WAM	(732) 906-6172	---
ODEQ Project Personnel			
Todd Downham	ODEQ RPM	(405) 702-5136	---
Active Petroleum Pipeline (Emergency = 800-720-2417)			
Cliff Winn	Magellan Midstream Partners, LP	(918) 574-7588	918-720-3027

The Site Manager/Site Health and Safety Officer will rehearse/review emergency procedures and/or applicable site contingencies initially during site orientation and as part of the ongoing site safety program with EA and subcontractor personnel. Offsite emergency personnel will ultimately handle onsite emergencies. Initial response and first aid treatment, however, will be provided onsite.

Person(s) identifying an accident, injury, emergency condition, or a scenario requiring implementation of a response in support of this HSP will immediately take actions to report the situation to the Site Manager/Site Health and Safety Officer. Notification may take place by runner, hand-held radio, or cell phone. The Site Manager/Site Health and Safety Officer will initiate the required response based upon the type of incident, following the procedures contained in this HSP. Chain-of-command and sign-in sheets for personnel on the site will be

established at the beginning of each work day to ensure personnel are accounted for and who will take control should the Site Manager/Site Health and Safety Officer become injured.

The following items constitute those site conditions requiring an emergency response or contingency action in accordance with this HSP:

- Fire/explosion
- Heavy equipment accident
- Natural disaster
- Medical emergency
- Discovery of unanticipated hazards (e.g., unmarked utility lines, heavily contaminated material).

Follow-on operations to evaluate and control the source of fire, explosion, and hazardous material incidents will occur only after discussion with the Project Manager, Site Manager/Site Health and Safety Officer, and the Health and Safety Coordinator along with the EPA personnel.

The Site Manager/Site Health and Safety Officer will act as the emergency coordinator at the site to coordinate onsite activities and contingencies with outside response organizations. If the Site Manager/Site Health and Safety Officer is unable to act as the emergency coordinator, then the authority to take action will be transferred to the other designee, as determined by the Health and Safety Coordinator.

6.2 PRE-EMERGENCY PLANNING

The SHSO will contact the applicable local emergency response organizations contained in Table 5 prior to beginning of the project to identify the emergency response requirements and commitments required to support this task order. The Project Manager, or designee, will contact those local authorities potentially required to respond in the event of an onsite emergency incident or contingency. This notification will inform each applicable agency of the starting date, anticipated scope of work, and existence of the HSP. A copy of the HSP will be made available to each emergency response agency upon request to the Project Manager. Emergency activities will be coordinated (as applicable) with the local emergency planning committee, as required in accordance with Superfund Amendments and Reauthorization Act Title III requirements.

6.3 OPERATIONS SHUTDOWN

The SHSO may mandate operations shutdown. Conditions warranting work stoppage will include (but are not limited to):

- Fire
- Explosion
- Uncovering potentially dangerous buried hazardous materials
- Conditions immediately dangerous to life and health or the environment

- Potential for electrical storms
- Treacherous weather-related conditions
- Limited visibility
- Upgrading of site security threat conditions.

6.4 PROCEDURES FOR HANDLING EMERGENCY INCIDENTS

In the event of an emergency, the information available at that time must be properly evaluated and the appropriate steps taken to implement the emergency response plan. The SHSO will assume command of the situation. He/she will alert the emergency management system per Table 1, and evacuate personnel to the pre-designated evacuation location. The SHSO will make required notifications to include, but not be limited to, the EA Project Manager, EA Health and Safety Coordinator, EPA Point-of-Contact, as defined in this HSP and Table 5, and the appropriate federal and state agencies, as applicable.

Site personnel will have the capability of notifying emergency responders directly from the site using the onsite cell phone.

The Project Manager will complete and submit to an EPA-appointed representative an accident/loss and incident report (Appendix D), within 24 hours. The following information will be provided when reporting an emergency:

- Name and location of person reporting
- Location of accident/incident
- Name and affiliation of injured party
- Description of injuries, fire, spill, or explosion
- Status of medical aid and/or other emergency control efforts
- Details of chemicals involved
- Summary of accident, including suspected cause and time it occurred
- Temporary control measures taken to minimize further risk.

This information is not to be released under any circumstances to parties other than those listed in this section and emergency response team members. Once emergency response agencies have been notified, the Project Manager and EPA Point-of-Contact will be immediately notified.

6.5 MEDICAL EMERGENCIES

Personnel should always be alert for signs and symptoms of illnesses related to chemical, physical, and onsite health hazards. Severe injuries resulting from accidents must be recognized as emergencies and treated as such.

In a medical emergency, the SHSO must sound the emergency alarm, upon which work must stop and personnel must move to the predesignated evacuation location. **If the emergency situation cannot be conveyed by word of mouth, cellular telephone, or two-way radio, a whistle or other horn will be sounded. Three short blasts, separated by a 2-second**

silence, will be used as the emergency signal. Personnel currently trained in first aid will evaluate the nature of the injury, decontaminate the victim (if necessary), and initiate first aid assistance immediately and transport if appropriate. First aid will be administered only to limit further injury and stabilize the victim. The local Emergency Medical Services must be notified immediately if needed.

Although not anticipated, victims who are heavily contaminated with toxic or dangerous materials must be decontaminated before being transported from the site. Since no hazardous materials are anticipated, a formal decontamination station will not be available; however, there is an emergency eyewash station in each of the EA vehicles. Decontamination will consist of removal of contaminated coveralls/clothing, and wrapping the victim in a sheet or other cloth like material as necessary. No persons will re-enter the site of injury/illness until the cause of the injury or symptoms has been determined and controlled. At no time will personnel transport victims to emergency medical facilities unless the injury does not pose an immediate threat to life and transport to the emergency medical facility can be accomplished without the risk of further injury. Emergency Medical Services will be used to transport serious injuries offsite unless deemed otherwise by the SHSO.

The SHSO must complete a detailed report and submit it to the Project Manager within 24 hours of the following types of incidents:

- Job-related injuries and illnesses
- Accidents resulting in loss or damage to property
- Accidents involving vehicles and/or vessels, whether or not they result in damage to property or personnel
- Accidents in which there may have been no injury or property damage, but which have a high probability of recurring with at least a moderate risk to personnel or property
- Near-miss incidents that could have resulted in any of the conditions defined above.

An accident that results in a fatality must be reported within 8 hours to the U.S. Department of Labor through the Project Manager and Program Health and Safety Officer. An accident that requires the inpatient hospitalization of one or more employees, an amputation, or the loss of an eye must be reported within 24 hours to the U.S. Department of Labor through the Project Manager and Program Health and Safety Officer. Subcontractors are responsible for their reporting to the U.S. Department of Labor.

In order to support onsite medical emergencies, first aid/emergency medical equipment will be available in the onsite company vehicle:

- Portable emergency eye wash
- A 20-pound multipurpose (ABC-rated) fire extinguisher
- An adequately stocked first aid kit

- Adequate supplies of potable water for decontamination, personal hygiene, and emergency use
- An emergency siren or horn
- Cell phone
- Copy of HSP.

6.6 FIRE/EXPLOSION EMERGENCIES

Fire and explosion must be immediately recognized as an emergency. The SHSO must sound an emergency signal, and personnel must be decontaminated (if necessary) and evacuated to the pre-designated evacuation location. Only persons properly trained in fire suppression and other emergency response procedures will support control activities. Control activities will consist of the use of onsite portable fire extinguishers for limited fire suppression and employee evacuation. Upon sounding the emergency alarm, personnel will evacuate the hazard location and assemble at the designated site meeting area. Only the SHSO, or those site personnel trained in the use of portable fire extinguishers, will attempt to suppress a site fire. Small, multi-purpose dry chemical extinguishers will be maintained in each EA vehicle onsite. Fires not able to be extinguished using onsite extinguishers will require the support of the local Fire Department. The SHSO should take measures to reduce injury and illness by evacuating personnel from the hazard location as quickly as possible. The Site Health and Safety Officer must then notify the local Fire Department. The SHSO will determine proper follow-up actions. Site personnel will not resume work during or after a fire/explosion incident until the SHSO has directed that the incident is over and work may resume. During the incident, site personnel will remain outside the incident area and obey the instructions of the SHSO.

6.7 EMERGENCY TELEPHONE NUMBERS

Communications will be by telephones located in the EA vehicle onsite and the field personnel will have access to this telephone to directly contact offsite emergency response organizations. Refer to Table 5 for a listing of emergency telephone numbers in Section 6.1.

6.8 CONTROL OF SITE PRODUCED AMBIENT NOISE LEVELS

In order to maintain ambient noise levels within acceptable standards, site activities will take place between 0700 and 1900 hours each workday. Equipment used onsite containing internal combustion engines will be required to have mufflers attenuating sound output 80 dBA at a distance of 50 feet from the operating equipment. Complaints by local inhabitants received by the SHSO will prompt sound level monitoring operations to ensure compliance with the standard.

7. SITE CONTROL AND WORK ZONES

The following work zones will be established during implementation of the field activities as a means of site control. Work zones will be established, if needed, in accordance with the following:

- **Exclusion Zone**—This area has either known or potential contamination and has the highest potential for exposure to chemicals onsite. The outer boundary of the EZ is called the hotline. The hotline separates the area of known or potential contamination from the rest of the site. The hotline should initially be established by visually surveying the site for signs of contamination, providing sufficient space to protect personnel outside the zone, allowing an adequate area in which to conduct site operations, and for reducing the potential for contaminant migration. The hotline will be physically secured or clearly marked. During subsequent site operations, the boundary may be adjusted as more information becomes available. Persons who enter the EZ must wear the appropriate level of PPE for the degree and types of hazards present at the site.

- **Contamination Reduction Zone (CRZ)**—One access point to the EZ designated by the SHSO.

  The purpose of the CRZ is to reduce the possibility that the Support Zone (SZ) will become contaminated or affected by the site hazards. Because of both distance and decontamination procedures, the degree of contamination in the CRZ generally will decrease as one moves from the hotline to the SZ.

  The CRZ will be established outside the areas of known or potential contamination. Contamination Reduction Corridors, which are access control points between the EZ and CRZ, should be established for both personnel and heavy equipment. These corridors should consist of an appropriate number of decontamination stations necessary to address the contaminants of the particular site (see National Institute of Occupational Safety and Health/OSHA/U.S. Coast Guard/U.S. Environmental Protection Agency *Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities*, October 1985 for information on decontamination procedures and work zones).

- **Support Zone**—Uncontaminated area and may include site vehicles.

  The SZ is the uncontaminated area where workers are unlikely to be exposed to hazardous substances or dangerous conditions. The SZ is the appropriate location for the equipment and supply center and other administrative or support functions that are necessary to keep site operations running efficiently.

  Potentially contaminated clothing, equipment, and samples must remain outside the SZ until decontaminated. However, personnel located in the SZ must receive instruction in proper evacuation procedures in case of a hazardous substance emergency. The SZ should be upwind and as far from the EZ as practicable.

The SZ will be located in the fenced parking lot of the vacant church (Lorraine Process Area).

The level of PPE will depend upon the type of work performed and site monitoring data. Level C will be the minimum protection in the EZ. The CRZ will require a minimum Level D. No specific PPE requirements are needed in the SZ, as contaminated materials are prohibited from being stored in this area. Only authorized personnel will be permitted in the EZ and CRZ. Entering these zones will require donning the required PPE prior to entry. These zones will be established prior to beginning the field activities.

Exiting the EZ will require going through decontamination in the CRZ.

Safe work practices to be followed by site workers include:

- Eating, drinking, chewing gum or tobacco, and smoking are prohibited in all the three zones at all times.
- Hands and face must be thoroughly washed upon leaving the work area.
- Personnel must not take prescription drugs unless specifically approved by a licensed physician who is familiar with the issues of worker exposure to hazardous materials.
- When respirators are required, facial hair that interferes with the face-to-face piece fit of the respirator will not be permitted.
- Work is allowed during daylight hours only.
- If dust is being visually generated in the EZ, the SHSO will advise on procedures for misting or wetting the soil to prevent possible exposure from inhalation of soil contaminants.
- Possessing, using, purchasing, distributing, selling, or having controlled substances in your system during the workday, including meal or break periods onsite, is strictly prohibited.
- The use or possession of alcoholic beverages onsite is prohibited. Similarly, reporting to work or performing one's job assignments with excessive levels of alcohol in one's system will not be permitted.

8. REFERENCES

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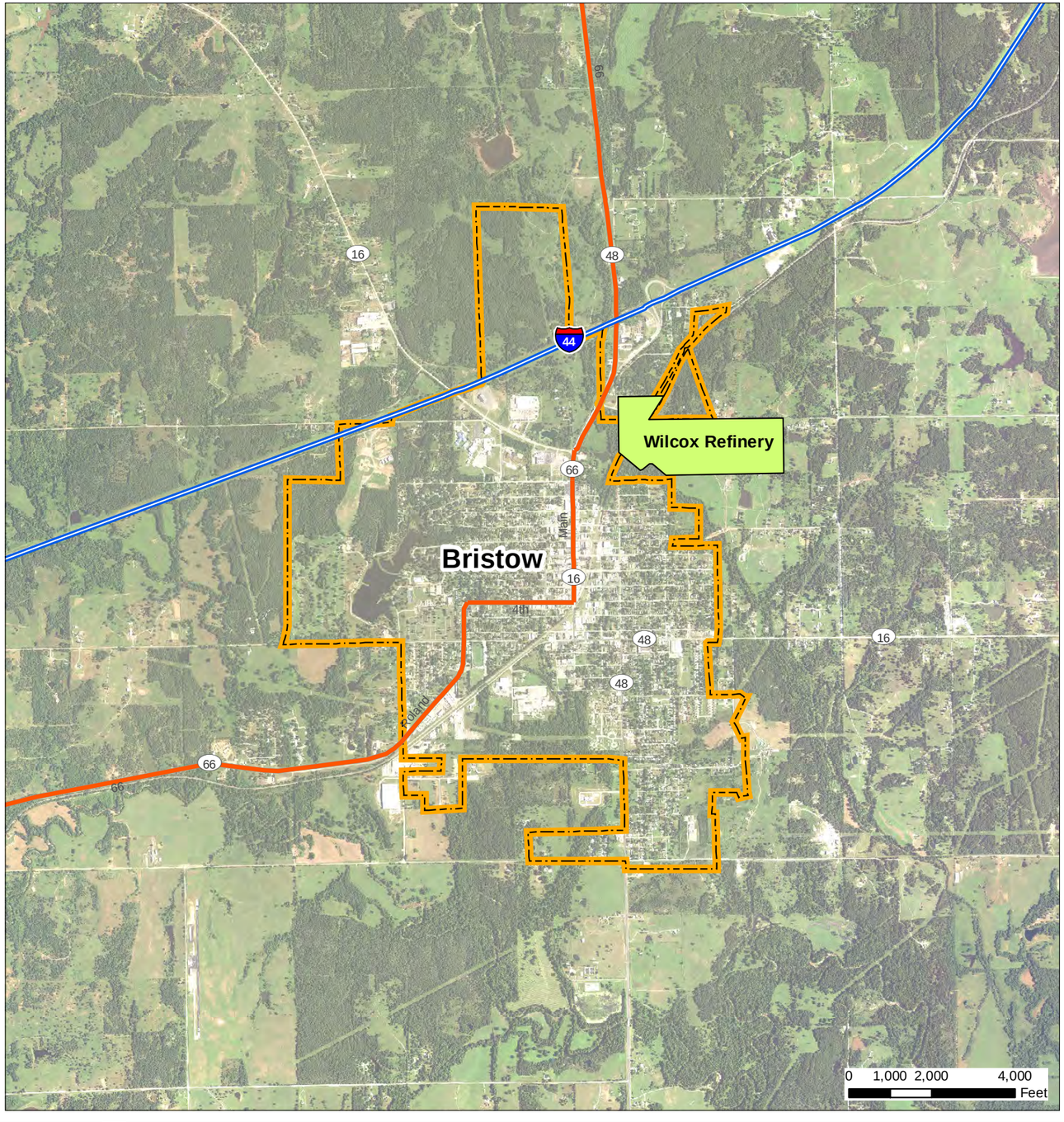
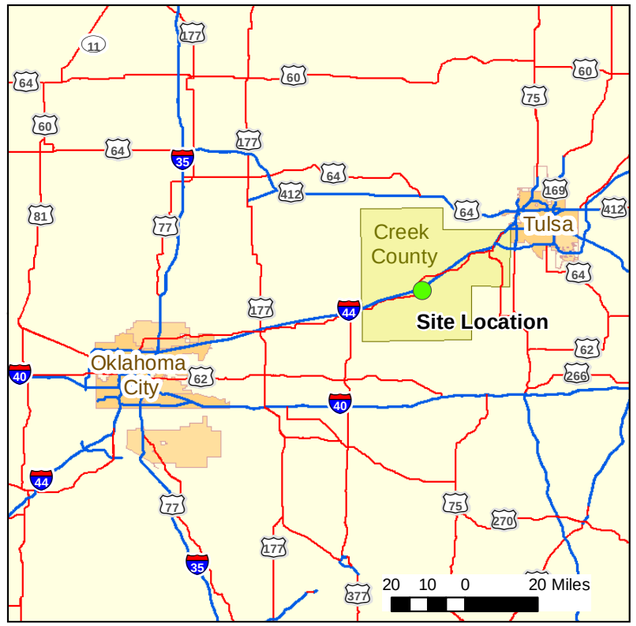
Figures

P:\gis\Projects\Wilcox\MXDs\SAP\2-Wilcox Location Map.mxd 4/14/2016 EA rmullen





Legend

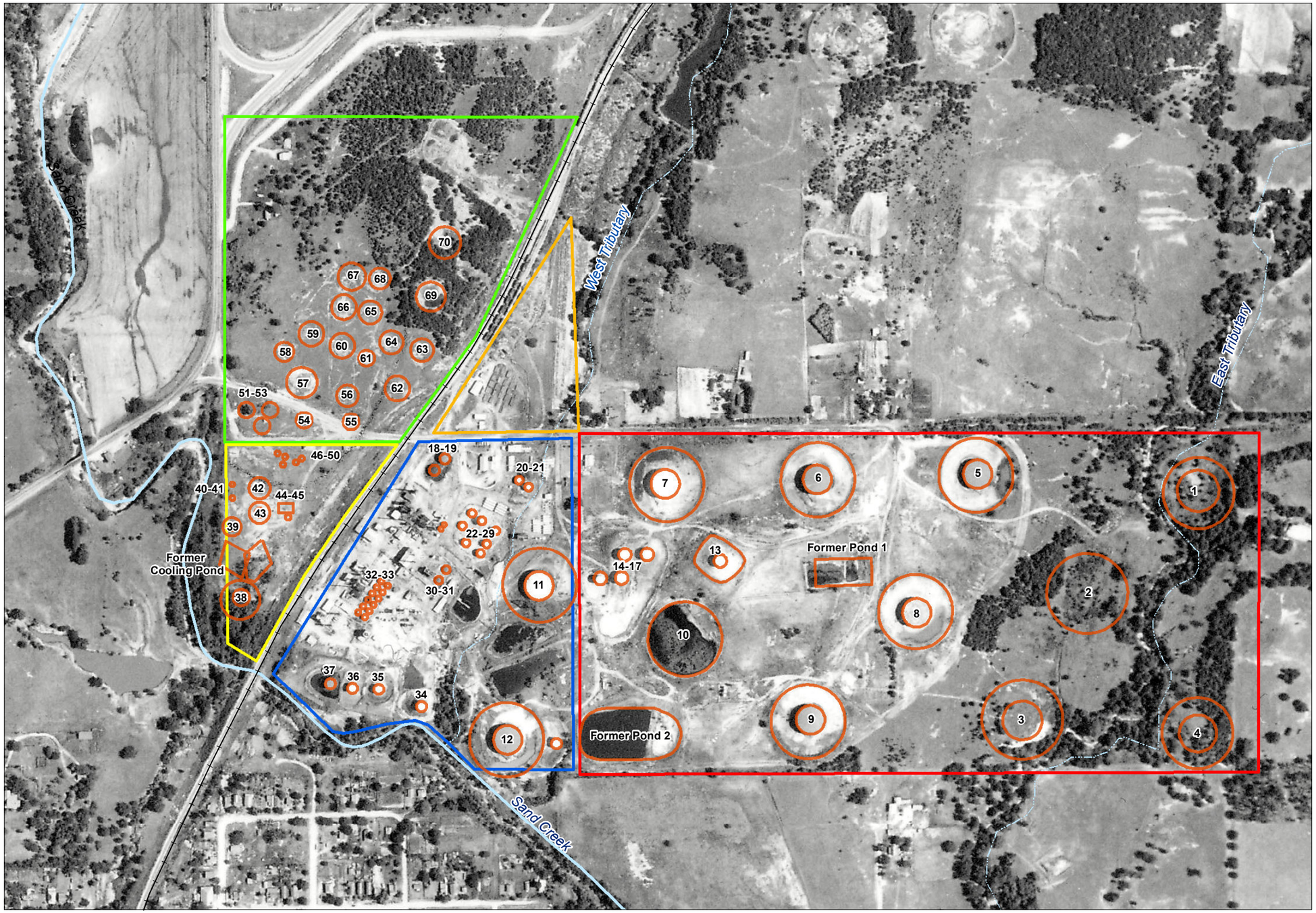
- Interstate
- Highway
- Bristow City Boundary

Health and Safety Plan for
Remedial Investigation
for Wilcox Oil Company Superfund Site
Bristow, Creek County, Oklahoma

Image Source: National Agriculture Imagery Program 2015

FIGURE 1
SITE LOCATION

P:\gis\Projects\Wilcox\MXDs\SAP\3-Historical Site Features.mxd 4/13/2016 EA rmullen



0 200 400 800 Feet

1 inch = 400 feet

Legend

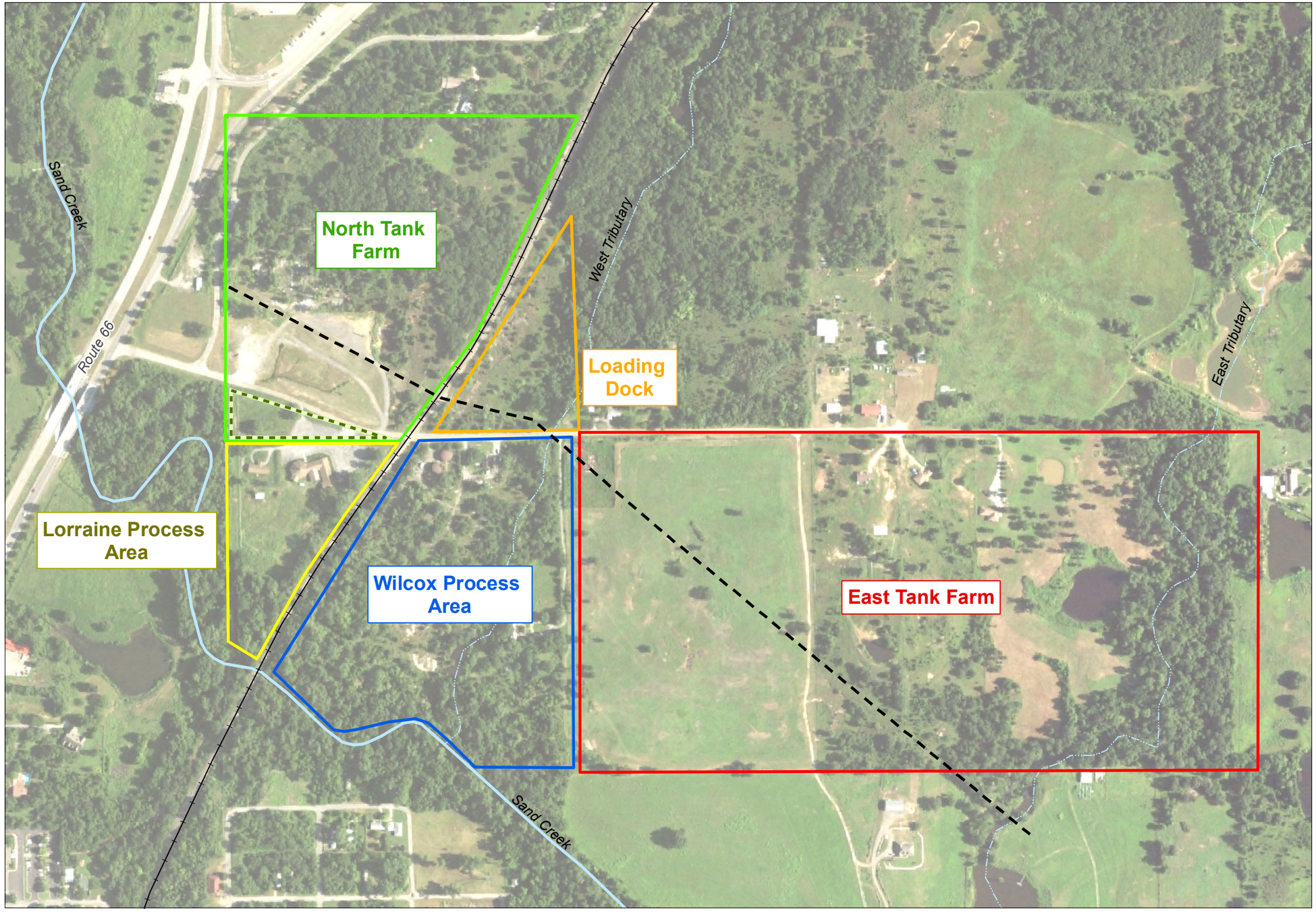
- Historical Feature
- Railroad
- Stream, Intermittent
- Stream, Perennial
- East Tank Farm
- Loading Dock
- Lorraine Process Area
- North Tank Farm
- Wilcox Process Area

Image Source: 1956 Aerial Photograph

Health and Safety Plan
for Remedial Investigation
for Wilcox Oil Company Superfund Site
Bristow, Creek County, Oklahoma

FIGURE 2
HISTORICAL SITE FEATURES

P:\gis\Projects\Wilcox\MXDs\SAP\4-Site Layout.mxd 4/13/2016 EA rmullen



0 200 400 800 Feet

1 inch = 400 feet

Legend

- Stream, Intermittent
- Stream, Perennial
- Pipeline
- Railroad
- Area will be designated as part of Lorraine Process Area for this investigation.

Image Source: National Agriculture Imagery Program 2015

Health and Safety Plan
for Remedial Investigation
for Wilcox Oil Company Superfund Site
Bristow, Creek County, Oklahoma

FIGURE 3
SITE LAYOUT

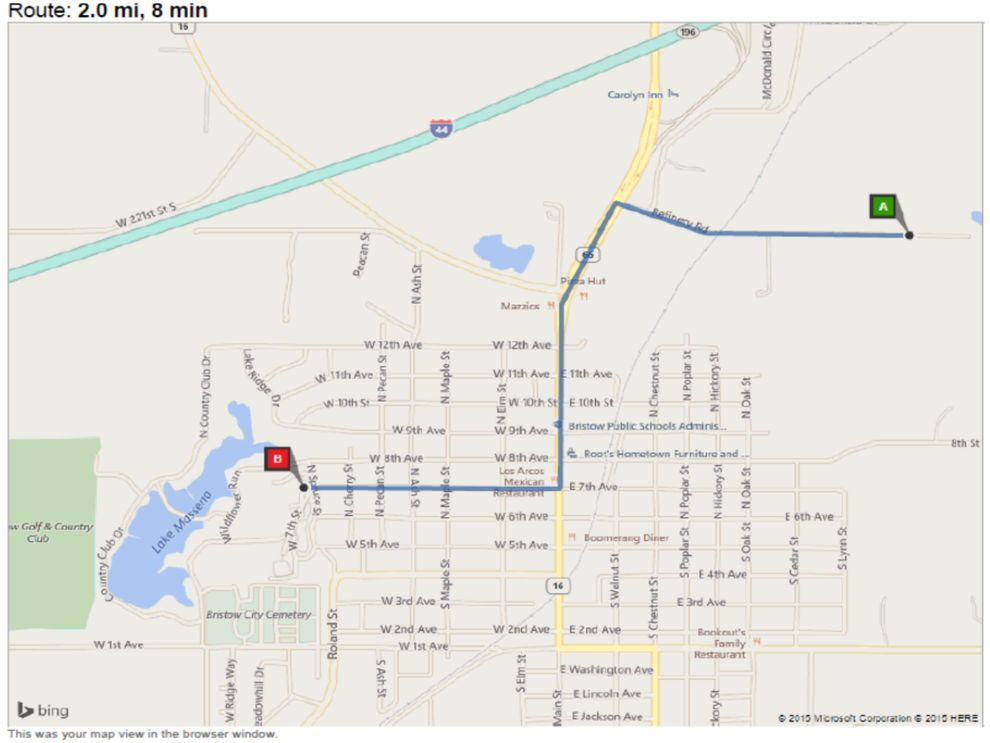
DIRECTIONS TO BRISTOW MEDICAL CENTER

A	**W 221st St S, Bristow, OK 74010**	**A–B: 2.0 mi** 8 min
	1. Depart **Refinery Rd** toward McDonald Dr	0.7 mi
	2. Turn **left** onto **OK-48 S / OK-66 S**	0.2 mi
	3. Keep **straight** onto **OK-16 E / OK-48 S / OK-66 S**	0.5 mi
	4. Turn **right** onto **W 7th St**	0.5 mi
	5. Keep **right** onto **road**	161 ft
B	6. Arrive at **Bristow Medical Center, OK** *The last intersection is W 7th St*	

SOURCE: MODIFIED FROM: Bing.com

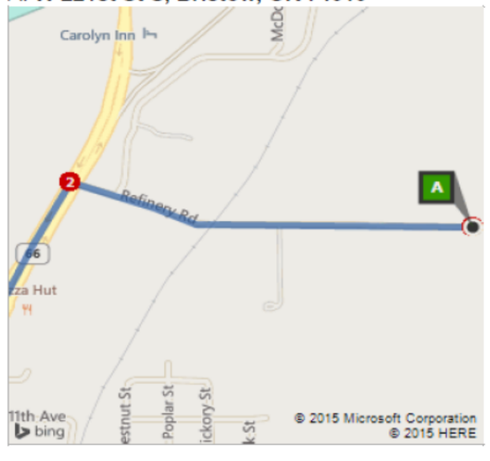
Note: This sheet must be posted on site

Route: **2.0 mi, 8 min**



This was your map view in the browser window.

A: **W 221st St S, Bristow, OK 74010**



B: **Bristow Medical Center, OK**

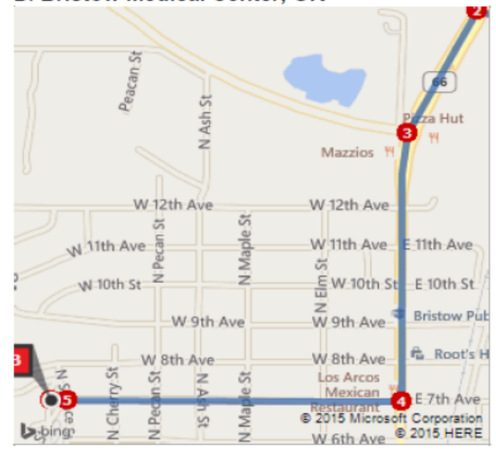


FIGURE 4: HOSPITAL ROUTE MAP

Appendix A

Site Health and Safety Plan Review Record

APPENDIX A

SITE HEALTH AND SAFETY PLAN REVIEW RECORD

Site Name/Location: ____

I have read the Health and Safety Plan for this site and have been briefed on the nature, level, and degree of exposure likely as a result of participation in this project. I agree to conform to all the requirements of this Plan.

NAME	SIGNATURE	COMPANY	DATE

Appendix B

Daily Site Log

APPENDIX B

DAILY SITE LOG

Site Name:_____ Date: _____

Name (print)	Company	Time	
		In	Out

Comments:

_____

_____

_____

Appendix C

Daily Safety Meeting Form

APPENDIX C

DAILY SAFETY MEETING FORM

Date: _____ Time: _____Project No.: _____

Site Name/Location: _____

Site Activities Planned for Today: _____

_____

Safety Topics Discussed
Protective clothing and equipment:
Chemical hazards:
Physical hazards:
Environmental and biohazards:
Equipment hazards:
Decontamination procedures:
Other:
Review of emergency procedures and comments:

DAILY SAFETY MEETING FORM (CONTINUED)

Attendees	
Printed Name	**Signature**

Meeting Conducted by:

_____ _____

Name Title

_____

Signature

Appendix D

Accident/Loss and Incident Report

ACCIDENT/LOSS REPORT

THIS REPORT MUST BE COMPLETED BY THE INJURED EMPLOYEE OR SUPERVISOR AND FAXED TO EA CORPORATE HUMAN RESOURCES WITHIN 24 HOURS OF ANY ACCIDENT. THE FAX NUMBER IS **(410) 771-1780**.

NOTE WHENEVER AN EMPLOYEE IS SENT FOR MEDICAL TREATMENT FOR A WORK RELATED INJURY OR ILLNESS, PAGE 4 OF THIS REPORT MUST ACCOMPANY THAT INDIVIDUAL TO ENSURE THAT ALL INVOICES/BILLS/CORRESPONDENCE ARE SENT TO HUMAN RESOURCES FOR TIMELY RESPONSE.

a. DEMOGRAPHIC INFORMATION:

NAME OF INJURED EMPLOYEE:_____
HOME ADDRESS:_____
HOME PHONE:_____ DATE OF BIRTH:_____
AGE:_____ SEX: M F
MARITAL STATUS:_____ NAME OF SPOUSE (if applicable)_____
SOCIAL SECURITY NUMBER:_____ DATE OF HIRE:_____
NUMBER OF DEPENDENTS:_____
EMPLOYEES JOB TITLE:_____
DEPT. REGULARLY EMPLOYED:_____
WAS THE EMPLOYEE INJURED ON THE JOB: Y N
PRIMARY LANGUAGE OF THE EMPLOYEE: _____

b. ACCIDENT/INCIDENT INFORMATION:

DATE OF ACCIDENT:_____ TIME OF ACCIDENT:_____
REPORTED TO WHOM: _____ NAME OF SUPERVISOR_____
EXACT LOCATION WHERE ACCIDENT OCCURRED (**including street, city, state and County**):
EXPLAIN WHAT HAPPENED (include what the employee was doing at the time of the accident and how the accident occurred): _____
_____
_____
_____

DESCRIBE THE INJURY AND THE SPECIFIC PART OF THE BODY AFFECTED (i.e., laceration, right hand, third finger):
_____
_____

OBJECT OR SUBSTANCE THAT DIRECTLY INJURED EMPLOYEE:_____

NUMBER OF DAYS AND HOURS EMPLOYEE USUALLY WORKS PER WEEK:_____

IS THE EMPLOYEE EXPECTED TO LOSE AT LEAST ONE FULL DAY OF WORK?_____

DOES THE EMPLOYEE HAVE A PREVIOUS CLAIM? Y N if yes, STATUS Open Closed

WAS THE EMPLOYEE ASSIGNED TO RESTRICTED DUTY? _____

c. ACCIDENT INVESTIGATION INFORMATION

WAS SAFETY EQUIPMENT PROVIDED? Y N If yes, was it used? Y N

WAS AN UNSAFE ACT BEING FORMED ? Y N If yes, describe_____

WAS A MACHINE PART INVOLVED? Y N If yes, describe _____

WAS THE MACHINE PART DEFECTIVE? Y N If yes, in what way _____

WAS A 3RD PARTY RESPONSIBLE FOR THE ACCIDENT/INCIDENT? Y N

If yes, list Name, address and phone number_____

_____

WAS THE ACCIDENT/INCIDENT WITNESSED? Y N

If yes, list Name, address and phone number: _____

_____

d. PROVIDER INFORMATION

WAS FIRST AID GIVEN ON SITE? Y N

If yes, what type of medical treatment was given _____

PHYSICIAN INFORMATION (if medical attention was administered)

NAME:_____

_

ADDRESS (incl. City, state and zip):_____

PHONE:_____

HOSPITAL ADDRESS (incl. Name, address, city, state, zip code & phone)

_____

_____

_

WAS THE EMPLOYEE HOSPITALIZED? Y N If yes, on what date_____

WAS THE EMPLOYEE TREATED AS AN OUTPATIENT, RECEIVE EMERGENCY TREATMENT OR AMBULANCE SERVICE? _____

PLEASE ATTACH THE PHYSICIANS WRITTEN RETURN TO WORK SLIP

***NOTE* A PHYSICIANS RETURN TO WORK SLIP IS REQUIRED PRIOR TO ALLOWING THE WORKER TO RETURN TO WORK**

e. AUTOMOBILE ACCIDENT INFORMATION (complete if applicable)

AUTHORITY CONTACTED AND REPORT #_____
EA EMPLOYEE VEHICLE YEAR, MAKE AND MODEL_____
V.I.N._____ PLATE/TAG #_____
OWNER'S NAME AND ADDRESS:_____
DRIVER'S NAME AND ADDRESS: _____
RELATION TO INSURED:_____DRIVER'S LICENSE #_____
DESCRIBE DAMAGE TO YOUR PROPERTY:_____
DESCRIBE DAMAGE TO OTHER VEHICLE OR PROPERTY:_____
OTHER DRIVER'S NAME AND ADDRESS: _____
OTHER DRIVER'S PHONE:_____
OTHER DRIVER'S INSURANCE COMPANY AND PHONE:_____
LOCATION OF OTHER VEHICLE:_____
NAME, ADDRESS AND PHONE OF OTHER INJURED PARTIES:_____
WITNESSES

NAME:_____ PHONE:_____
ADDRESS:_____
STATEMENT:_____
SIGNATURE:
_____

NAME:_____ PHONE:_____
ADDRESS:_____
STATEMENT:_____
_____
SIGNATURE:
_____

f. ACKNOWLEDGEMENT

NAME OF SUPERVISOR:_____
DATE OF THIS REPORT: _____ REPORT PREPARED BY:_____

I have read this report and the contents as to how the accident/loss occurred is accurate to the best of my knowledge.

Signature: _____ Date: _____
Injured Employee

I am seeking medical treatment for a work related injury/illness.

Please forward all bills/invoices/correspondence to:

EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC.

225 SCHILLING CIRCLE
SUITE 400
HUNT VALLEY, MD 21031

ATTENTION: MICHELE BAILEY
HUMAN RESOURCES

(410) 584-7000

INCIDENT REPORT

THIS REPORT IS TO BE COMPLETED WHEN A NEAR MISS OCCURS THAT COULD HAVE POTENTIALLY RESULTED IN SERIOUS PHYSICAL HARM. PLEASE FAX THIS FORM TO EA HUMAN RESOURCES DEPARTMENT AT **(410) 771-1780**.

EXPLAIN WHAT HAPPENED (include what the employee was doing at the time the near miss and how it occurred: _____

REPORT PREPARED BY: _____ DATE:_____

Appendix E

Air Sampling and Monitoring Data Sheets

AIR SAMPLING DATA SHEET
WILCOX OIL COMPANY SITE

Date	Time (on/off)	Pre-Test Calibration Flow (L/min)	Pre-Test Calibration Average Flow (L/min)	Post-Test Calibration Flow (L/min)	Post-Test Calibration Average Flow (L/min)	Average Calibration Flow (L/min)	Total Test Time (min)	Total Sample Volume (L)	Pump Serial No.	Filter No.	Sample ID No.	Employee Wearing Sampler

Calibrated By:_____

Chain of Custody #:_____

Date Sent to Lab:_____

Valid Pre-test and Post-test Leak Check: ____ Yes ____ No

AIR MONITORING DATA SHEET – AEROSOL MONITORING SYSTEM
WILCOX OIL COMPANY SITE

Date	Time	Calibration	Activity	Location	Personnel Wearing Sampler	Monitoring Results

Calibrated By:_____